FLORIDA DEPARTMENT OF TRANSPORTATION
AVIATION AND SPACEPORT OFFICE

MARCO ISLAND EXECUTIVE AIRPORT (MKY)

DISTRICT 1

GENERAL AVIATION AIRPORT

DECEMBER 2013

STATEWIDE Airfield Pavement Management PROGRAM

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EXECUTIVE SUMMARY

In 2012, the Florida Department of Transportation (FDOT) Aviation and Spaceport Office selected a team lead by ***Kimley-Horn and Associates, Inc.*** and including their subconsultants Peneul Consulting, LLC, Roy D. McQueen & Associates, LTD, and All About Pavements, Inc., to provide services in support of FDOT in the continued efforts of updating the existing Statewide Airfield Pavement Management Program (SAPMP). This work is to be completed over the fiscal years of 2013 and 2014.

The tasks required to achieve this objective at each participating airport specifically included the following:

- Obtain recent construction history from the airport to update the Pavement Network Definition Exhibits using CADD from the previous SAPMP update.
- Update the airport pavement inventory data (construction history, geometry, identification, and classification) based on airport information provided.
- Update the FDOT SAPMP MicroPAVER database files and system tables for the purpose of analyzing field data for Pavement Condition Index (PCI) calculation of current pavement condition
- Development of pavement performance models for the approximation of future pavement performance.
- Development of a maintenance and repair plan, and a 10-year major rehabilitation program to address the pavement needs based on condition.
- Development of planning level opinions of probable costs for pavement preservation and rehabilitation.

During MAY 2013, a PCI survey inspection was performed at Marco Island Airport. The results of the inspection indicate that, based on ASTM 5340-11, the airport's airfield pavement facilities had an overall area-weighted average PCI 58, representing a FAIR overall network condition. **Table I** summarizes the overall condition summary by network level branch in comparison to the FDOT recommended minimum service level.

Table I: Condition Summary by Branch

Branch Name	Area Weighted PCI	PCI Range	Average Condition Rating	FDOT Minimum Service Level	MicroPAVER Minimum PCI	Action Required
RUNWAY 17-35	29	29 - 30	VERY POOR	75	65	X
TAXIWAY A	99	94 -100	GOOD	65	65	
TAXIWAY B	20	20	SERIOUS	65	65	X
TAXIWAY C	96	96	GOOD	65	65	
TAXIWAY D	100	100	GOOD	65	65	
NORTH APRON	56	46 - 100	FAIR	60	65	X
NORTHWEST APRON	98	80 - 100	GOOD	60	65	

For project level planning and inspection development; the airfield pavement facilities have been divided at the branch level based on facility use and designation, and at the section level based on pavement construction history, composition (e.g. asphalt versus concrete), aircraft traffic operations, and pavement surface conditions. **Table II** provides the overall area weighted condition of the pavement based on facility branch use.

Table II: Condition Summary by Pavement Facility Use

Use	Average Area-Weighted PCI	Condition Rating
Runway	29	VERY POOR
Taxiway	95	GOOD
Apron	76	SATISFACTORY

Based on the inspection performed at the airport for this SAPMP update; the current conditions were determined using the collected PCI distress data. PCI values were computed and used to identify pavement facilities that were below the defined critical PCI as sections that would benefit from immediate major rehabilitation activity. These pavement sections that were determined to be below the critical PCI would most likely benefit from long-term major rehabilitative construction activity rather than localized, short-term maintenance and repairs.

The Year-1 Major Rehabilitation Needs, or projects that are recommended to be completed because the pavement is below the critical PCI, were developed on the assumption that there is an unlimited repair budget. These

- **Runway 17-35 –** Sections 6105, 6110, and 6115.
  - Reconstruction attributed to distresses related to climate and age of pavement.
- **North Apron –** Section 4205
  - Reconstruction attributed to distresses related to climate and age of pavement.
- **Taxiway B –** Section 205
  - Reconstruction attributed to distresses related to climate and age of pavement.

The section level projects that were identified as Year-1Major Rehabilitation Needs are in **Table III**.

Table III: Year-1 Major Rehabilitation Needs for Marco Island Airport

Branch ID	Section ID	Major Rehabilitation Costs	PCI Before M&R	Rehabilitation Activity	PCI After M&R
RW 17-35	6115	$ 1,500,000.36	30	Reconstruction	100
RW 17-35	6110	$ 4,500,001.06	29	Reconstruction	100
RW 17-35	6105	$ 1,500,000.36	29	Reconstruction	100
AP N	4205	$ 2,372,265.14	46	Mill and Overlay	100
TW B	205	$ 118,200.03	20	Reconstruction	100
	Total =	$9,990,466.95			

The SAPMP uses historic pavement condition data from the previous inspections to develop pavement performance models. These pavement performance models are used to create PCI prediction curves to estimate future pavement conditions based on the historic trends. The section areas, prediction curves, and current condition data were used to develop a 10-year major rehabilitation program. Major rehabilitation costs for each year of the 10-year program are based on general unit costs for pavement repairs and not detailed cost estimates that are typically prepared for a construction set of bid documents. Additionally, preventative maintenance level repair budgets were estimated for a 10-year duration. Table IV provides an annual summary of the 10-year Preventative Maintenance and Major Rehabilitation planning level cost opinions for the airfield pavement facilities at the airport. Refer to Section 6 of this report for additional information.

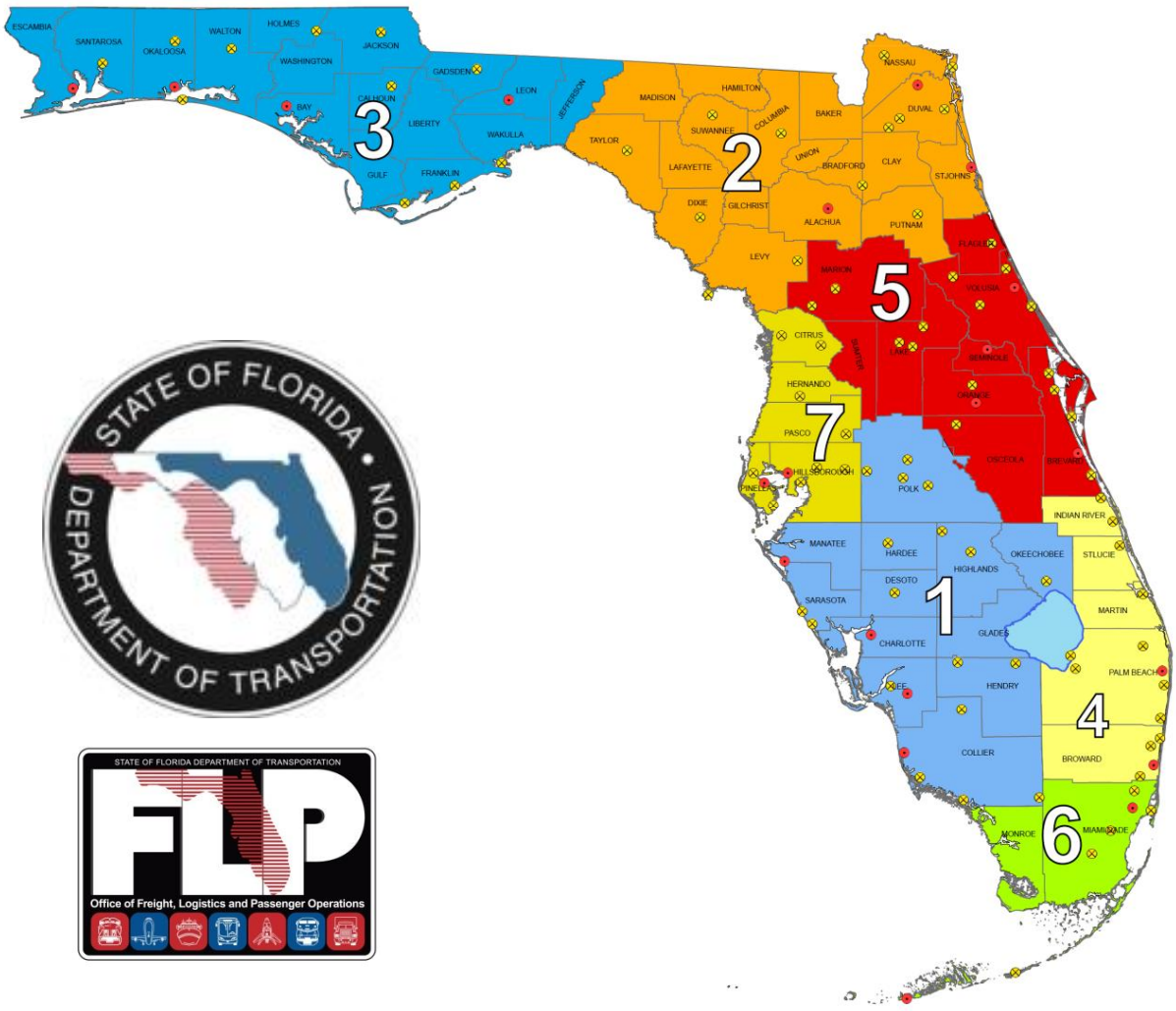
Table IV: 10-Year Preventative Maintenance and Major Rehabilitation

Year	Preventative	Major M&R	Total Year Cost
2014	$ 8,224.88	$ 9,990,466.95	$ 9,998,691.83
2015	$ 9,324.86	$ -	$ 9,324.86
2016	$ 32,290.52	$ -	$ 32,290.52
2017	$ 76,031.14	$ -	$ 76,031.14
2018	$ 126,615.42	$ -	$ 126,615.42
2019	$ 178,517.97	$ -	$ 178,517.97
2020	$ 233,911.51	$ -	$ 233,911.51
2021	$ 288,126.11	$ -	$ 288,126.11
2022	$ 339,845.74	$ -	$ 339,845.74
2023	$ 381,435.29	$ 179,427.18	$ 560,862.47
Total	**$1,674,323.44**	**$10,169,894.12**	**$ 11,844,217.57**

The success of the repair program for your airport depends on the timely implementation of preservation, localized maintenance and repairs, and major rehabilitation work activities. If work is completed as scheduled, your airport will probably experience an improvement to the overall area-weighted average PCI. Though this analysis was performed with the assumption of an "unlimited budget", the purpose has been to identify specific projects over the course of 10-years for each pavement section where the condition is projected to fall below the critical PCI. The costs depicted in this study are intended to aid the airports in planning level budgets. Prior to construction work, it is recommended that the airport perform additional investigation at the design level to better estimate costs associated with the maintenance, repair, and major rehabilitation activity discussed.

1. INTRODUCTION

The State of Florida has more than 100 public airports that are vital to the Florida economy as well as the economy of the United States. The aviation system in Florida allows the State to capitalize on an increasingly global marketplace. Florida's system of commercial service and general aviation airports are important to businesses throughout the entire State. Air travel is essential to tourism, Florida's number one industry.



There are millions of square feet of pavement infrastructure that consists of runways, taxiways, aprons, ramps, and other areas of airports that are vital to the support and safety of aircraft operations. Timely pavement maintenance repair and major rehabilitation of these pavements will support the airport in operating safely, efficiently, economically and without excessive down time.

The Florida Department of Transportation (FDOT) Aviation and Spaceport Office implemented the Statewide Airfield Pavement Management Program (SAPMP) in 1992. In 2012, the FDOT Aviation and Spaceport Office selected a team led by Kimley-Horn and Associates, Inc. and including Peneul Consulting, LLC, Roy D. McQueen & Associates, LTD, and All About Pavements, Inc., to provide services in support of the Aviation and Spaceport Office Program Manager. The continued evaluation and update of the existing SAPMP is to be completed over fiscal years 2013 and 2014.

This individual airport airfield pavement evaluation report discusses the work performed, a summary of findings, condition analysis results, and recommendations for maintenance repair and major rehabilitation planning associated with the SAPMP update. It also briefly describes the procedures used to ensure that the appropriate engineering and scientific standards of care, quality, budget, schedules, and safety requirements were implemented during the performance of this work.

1.1 Purpose of Pavement Evaluation Report

The purpose of this Airfield Pavement Evaluation Report is to:

- Describe, briefly, the SAPMP goals, procedures, and responsibilities of the program's participants.
- Provide a brief technical explanation on pavement management principles, standard practices, objectives, and benefits of implementation.
- Outline procedures used to coordinate, collect, evaluate and report pavement inspection results at this airport.
- Analyze and utilize condition results for the development of maintenance, repair, and major rehabilitation based on pavement performance trends.

1.2 FDOT Statewide Airfield Pavement Management Program

In 1992, the FDOT implemented the SAPMP to improve the knowledge of pavement conditions at public airports in the Florida Airports System, identify maintenance and rehabilitation needs at each airport, automate pavement infrastructure information management, and establish standards to address future needs. The 1992 SAPMP implementation provided the FDOT and the participating airports valuable information for establishing and performing timely and appropriate pavement rehabilitation.

During the 1992-1993 implementations and again during the 1998-1999 updates; the SAPMP performed the development of proprietary software for pavement

management system analysis. This development allowed for the creation of pavement management database file system populated with airport attributes and condition data. The pavement management database was used to establish maintenance, repair, and rehabilitation (M&R) policies, M&R budget costs, and the development of recommendations for performing routine pavement preservation maintenance. This system, known as AIRPAV, was initially developed during the 1992-1993 SAPMP implementation for the analysis of distress data. The AIRPAV system was used again in the 1998-1999 SAPMP update.

In 2004, the SAPMP update included the review of the AIRPAV software compared to other industry available non-proprietary software packages. As a result of this review, MicroPAVER was selected for implementation of the system update. MicroPAVER was developed by the U.S. Army Corps of Engineers Construction Engineering Research Laboratory for the purpose of pavement management. Data from the 1998-1999 FDOT SAPMP update, which was built upon the initial 1992-1993 implementation of AIRPAV, was reviewed and converted to be compatible with the MicroPAVER system. This data conversion included all documented pavement facility, classification, type, history, geometry, PCI condition data and pertinent attributes gathered from airport feedback at the time. This information was used to develop the inventory of each participating airport's pavement facilities in a consistent format. This was the development of Airfield Pavement Network Definition Exhibits. These inventory exhibits visually depicted the branch, section, and sample units that were based upon the pavement construction history and composition information provided by each airport.

In 2006-2008, the SAPMP was updated again with continued use of the MicroPAVER system. Based on the distress data collected, a maintenance repair and major rehabilitation planning program was developed for each airport. As part of this SAPMP update, the procedures for the inspection and the collection of the pavement distress data were documented, and an interactive website (http://www.dot.state.fl.us/aviation/pavement.shtm) was established for input of data.

In 2010-2012, the SAPMP was updated using new GPS integrated technology to digitally collect pavement distress data. Interactive GIS map files were developed from updated Airfield Pavement Network Definition Maps to aid pavement condition inspectors in the collection of sample distress data. The

data collected was utilized to develop pavement performance models to predict future pavement PCI values and make recommendations for major rehabilitation.

Currently, airports participating in the Airport Improvement Program (AIP) Grant Program are required by the Federal Aviation Administration (FAA) to develop and implement a pavement maintenance program to be eligible for funding (FAA Advisory Circular 150/5380-6B *Guidelines and Procedures for Maintenance of Airport Pavements*). This program requires detailed inspection of airfield pavement conditions by trained personnel. The inspections are required to be performed at least once a year or every three years, if the pavement is inspected in accordance to the PCI survey procedure (such as ASTM International D 5340 *Standard Test Method for Airport Pavement Condition Index Surveys*). The previous 2010-2012 SAPMP update utilized the ASTM D 5340-04 released in 2004, in lieu of the 2010/2011 edition, in order to maintain consistent database integrity and benefit of pavement performance models from previous inspections.

1.3 Organization

FDOT Aviation and Spaceport Office Program Manager

The FDOT Central Office Airport Engineering Manager serves as the Aviation Office Program Manager (AO-PM) for the SAPMP. The AO-PM monitors the work performed by the Consultant. The AO-PM has review and approval authority for each program task and manages the day-to-day details of the SAPMP and the pertinent updates.

The AO-PM reports updates and milestones to the FDOT State Aviation Manager and Aviation Development Administrator.

Consultant

The Consultant, Kimley-Horn and Associates, Inc. and their team consisting of Peneul Consulting, LLC, Roy D. McQueen & Associates, LTD, and All About Pavements, Inc. provide technical and administrative assistance to the AO-PM during the execution of the update to the SAPMP. The efforts include updating the airport pavement inventory data, performing the condition survey inspections, evaluating the airfield pavement conditions and updating the SAPMP based upon procedures outlined in the FAA Advisory Circular 150/5380-6B *Guidelines and Procedures for Maintenance of Airport Pavements* and ASTM D 5340.

Airport Role

The airports are the ultimate client for each condition survey inspection performed at their respective airfields as part of the SAPMP. The individual airports will be provided final deliverables prepared by the Consultant that have been reviewed and approved by the AO-PM. The airport should provide a current Airport Layout Plan (ALP) to the Consultant and, if they participated in the previous SAPMP, indicate any construction activity that has been performed since the previous inspections.

FDOT District Offices

The seven FDOT District Offices, specifically the Aviation Representatives, provide vital support to the SAPMP update and the AO-PM. Each District supports the SAPMP's on-going efforts of provided representative construction trend costs and practices through the Florida Airports System. Each District Office receives copies of individual Airfield Pavement Evaluation Reports for the airport facilities located within their respective districts.

1.4 Introduction to Pavement Types and Pavement Management

Pavement Basics

A pavement is a prepared surface designed to provide a continuous smooth ride at all taxi, takeoff, and landing speeds and to support an estimated amount of traffic loading for a certain number of years. Pavements are composed of a combination of constructed layers of subgrade soils, subbases, base course material, and surface level courses. There are mainly two types of pavements:

- Flexible Pavement, a composition of bituminous asphalt concrete (AC) surface, base, and subbase layers.
- Rigid Pavement, a composition of Portland Cement Concrete (PCC) surface, base, and subbase layers.

Both pavement types use a combination of layered materials and thicknesses in order to support the traffic loads (both magnitude and repeated application) and protect the underlying subgrade soil. Flexible pavements dissipate applied loads from layer to layer until the load magnitude is small enough to be supported by the subgrade soil. In rigid pavements, the PCC layer supports the majority of the structural load applied, and the base or subbase layer is constructed to provide a smooth, level, and continuous platform that provides uniform support for PCC slabs.

A small percentage of airfield pavements within the Florida Airports System are composed of hybrid 'composite pavement' sections that may include both AC pavement and PCC pavement. The two known composite pavements are AC surface over PCC (APC) and PCC over AC (White Topping).

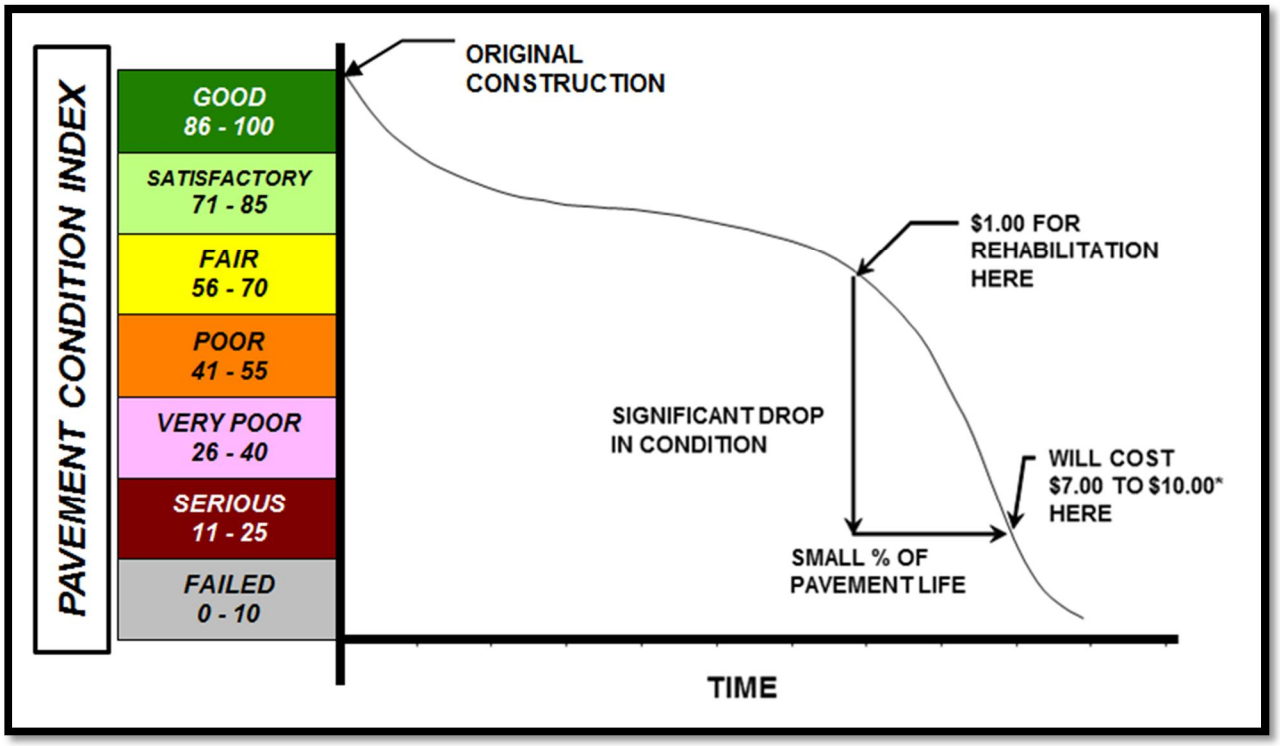
Due to the different nature of the pavement types, construction, and their materials; flexible and rigid pavements have different modes of failure and fatigue. This results in varying deterioration and distress development. Understanding the mechanics and modes of failure of the pavement types will assist the engineers in making timely, adequate, consistent, and economical maintenance repairs and major rehabilitation to the pavement structures at each airfield.

The Concept of an Airfield Pavement Management System

The SAPMP is a program that provides the Florida Airports System an opportunity to implement and/or maintain a proactive Airfield Pavement Management System (APMS) in a consistent manner at a regular schedule. The SAPMP Airfield Pavement Management System consists of pavement inventory, pavement construction and history, condition survey inspections, pavement performance modeling, maintenance recommendations, and major rehabilitation planning. The various elements of the APMS are used by experienced engineers to identify critical pavements, make pavement preservation or rehabilitation recommendations, and approximate pavement performance. The APMS as a whole is used by an airport's stakeholders, managing agencies, engineers, and planners as a tool in decision making for future project planning, budgeting, and scheduling of activities for its airfield pavement infrastructure.

A benefit of an active APMS is it provides an understanding of an airport's pavement performance trends for the purpose of project planning. Based on the performance trend of their pavements, an airport can schedule pavement maintenance and rehabilitation prior to when the pavement section has deteriorated to a condition that would require reconstruction. The use of pavement performance trends will help airports plan M&R and Rehabilitation projects in a manner and sequence that maximizes benefit and minimizes costs. **Figure 1-1**, which is based upon the FAA Advisory Circular 150 5380-7A *Airport Pavement Management Program*, illustrates how pavement generally deteriorates over time and the relative cost of rehabilitation and reconstruction throughout its life.

Figure 1-1: Pavement Life Cycle



Source: FAA Advisory Circular 150 5380-7A Airport Pavement Management Program

Note that during approximately the first 75% of a pavement's life, it performs relatively well. After that, however, it begins to deteriorate rapidly. The number of years a pavement stays in 'Good' and 'Satisfactory' conditions depends on how well it is proactively maintained. As the **Figure 1-1** demonstrates, the cost of maintaining the pavement above critical condition before rapid deterioration occurs is much less compared to maintaining pavements after substantial deterioration has occurred.

Pavements tend to deteriorate at an accelerated rate when actual traffic loading exceeds the original design assumptions and when limited resources are available for maintenance and repair (M&R) efforts. Planned maintenance and rehabilitation, essentially preserving pavements and delaying condition deterioration, help airport (managers, agencies, and engineers) maximize the use of their budgets and prolong the life of their pavements. An APMS provides a tool to schedule planned maintenance and major rehabilitation efforts based on a consistent methodology of condition assessment. This consistent methodology of pavement condition assessment allows for the development of pavement performance models to help forecast future pavement conditions.

Part of the implementation of the APMS is the clear identification and inventorying of pavement infrastructure that needs to be managed specifically within the airport (owner, manager, and agencies) responsibility. Another aspect of the APMS is development of maintenance, repair, and major rehabilitation policies that align with the expectations of pavement performance and are based on ability to fund the types of work identified. Once there is an understanding of the cause and extent of pavement distresses, appropriate maintenance and rehabilitation can be planned. By using representative construction costs based on historic bid trends; planning level budget costs can be developed on a multiyear duration.

Airfield Pavement Inspection Methodology for the SAPMP

Pavement condition assessment requires the application of professional judgments regarding the condition of the pavement. The SAPMP airfield pavement condition survey inspections assess pavement, comparing it to a set of standards in ASTM D 5340-*11*. As part of this update, SAPMP has adopted the changes made in updates to ASTM D 5340. These include the separation of Weathering and Raveling into two distinct flexible pavement distresses, and the addition of the Alkali-Silica Reactivity distress for rigid pavement distresses. The change in distress classification, as described in ASTM D 5340-11, may result in small variances in the PCI values from the previous inspection analysis.

The pavement condition surveys assess the functional condition of the pavement surface based on surface distresses as defined by the ASTM D 5340. Typically, deficiencies within a pavement structure will eventually reflect to the pavement surface as distresses described within ASTM D 5340. The SAPMP is specifically a visual evaluation and analysis based on the ASTM D 5340. The structural condition and relative support of the pavement layers can be directly quantified using non-destructive deflection testing (NDT) as well as other in-depth engineering evaluation or sampling and testing methods.

For the SAPMP update, only visual surveys were performed. Further structural and geotechnical testing should be conducted to determine design level rehabilitation and/or reconstruction needs should the airport proceed to the design process.

In preparation for the PCI survey inspections, the airfield pavements for each airport are divided into branches, sections, and sample units as established by FAA Advisory Circular 150/5380-6B and ASTM D 5340. Further discussion of the process of inventorying and categorizing pavement facilities by use,

composition, and history can be found in **SECTION 2 *AIRFIELD PAVEMENT NETWORK DEFINITION and PAVEMENT INVENTORY*.**

Sample units are uniformly divided areas of pavement that are defined for inspection. Sample unit sizes are approximately 5,000 ± 2,000 square feet for flexible AC pavements and 20 ± 8 slabs for rigid PCC pavements. Prior to conducting the field condition survey inspections, the sampling plan was developed for the airfield pavements based on updates to the previous inspection sampling based on the available knowledge of construction updates. The sample rate adopted for the SAPMP is depicted on **Table 1-1**.

Table 1-1: Sampling Rate Schedule for SAPMP PCI Survey Inspections

Flexible Pavements Asphalt Concrete		
Number of Sample Units in Section	Number of Sample Units to Inspect	
	Runway	***Taxiways, Aprons, Others***
1 - 4	1	1
5 - 10	2	1
11 - 15	3	2
16 - 30	5	3
31 - 40	7	4
41 - 50	8	5
≥ 51	20% but ≤ 20	10% but ≤ 10

Rigid Pavements Portland Cement Concrete		
Number of Sample Units in Section	Number of Sample Units to Inspect	
	Runway	***Taxiways, Aprons, Others***
1 - 3	1	1
4 - 6	2	1
7 - 10	3	2
11 - 15	4	2
16 - 20	5	3
21 - 30	7	3
31 - 40	8	4
41 - 50	10	5
≥ 51	20% but ≤ 20	10% but ≤ 10

The sample units to be inspected were determined through a systematic random sampling technique to provide an unbiased representation of sample units for each pavement facility. The sample unit locations had been determined in such a way that they are distributed evenly throughout each defined pavement section area. In certain cases when no representative distresses are observed in the field, additional sample units were added.

The distress quantities and severity levels from each inspected sample unit are used to compute the PCI value and rating for each Section using the ASTM D 5340-11 and MicroPAVER software. **Figures 1-2** and **1-3** depict graphical representations of the color ranges associated with PCI values and ranges with

a photograph of airfield pavement that exhibited the conditions for both flexible and rigid pavements respectively.

Figure 1-2: Flexible Pavement, Asphalt Concrete

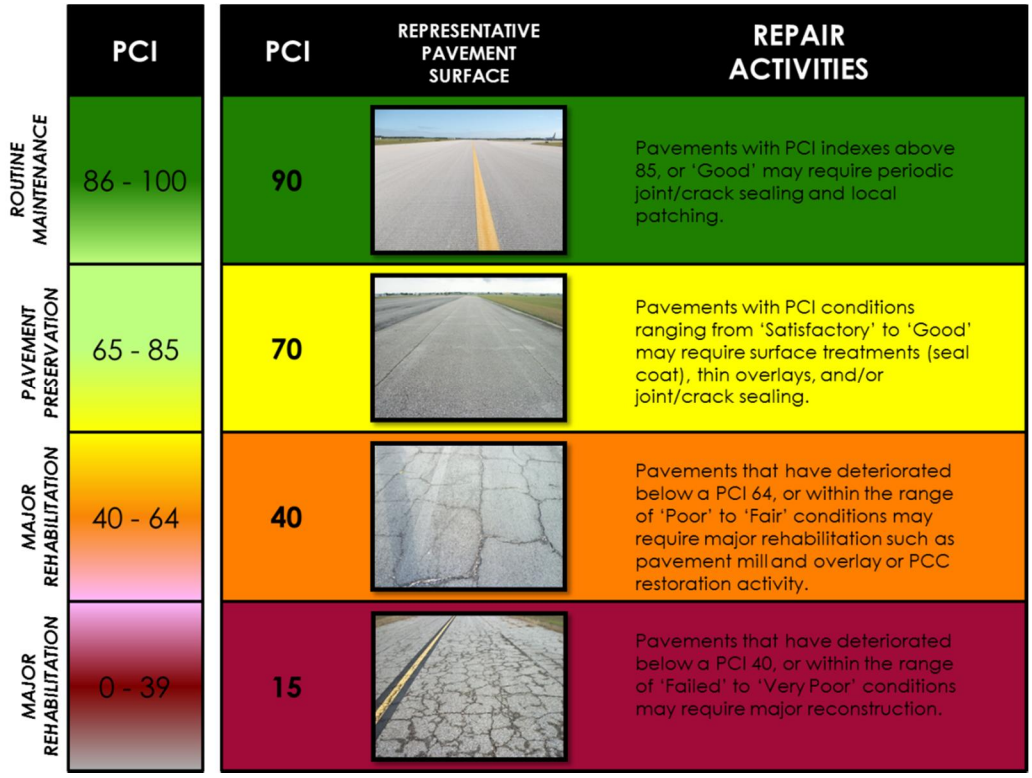
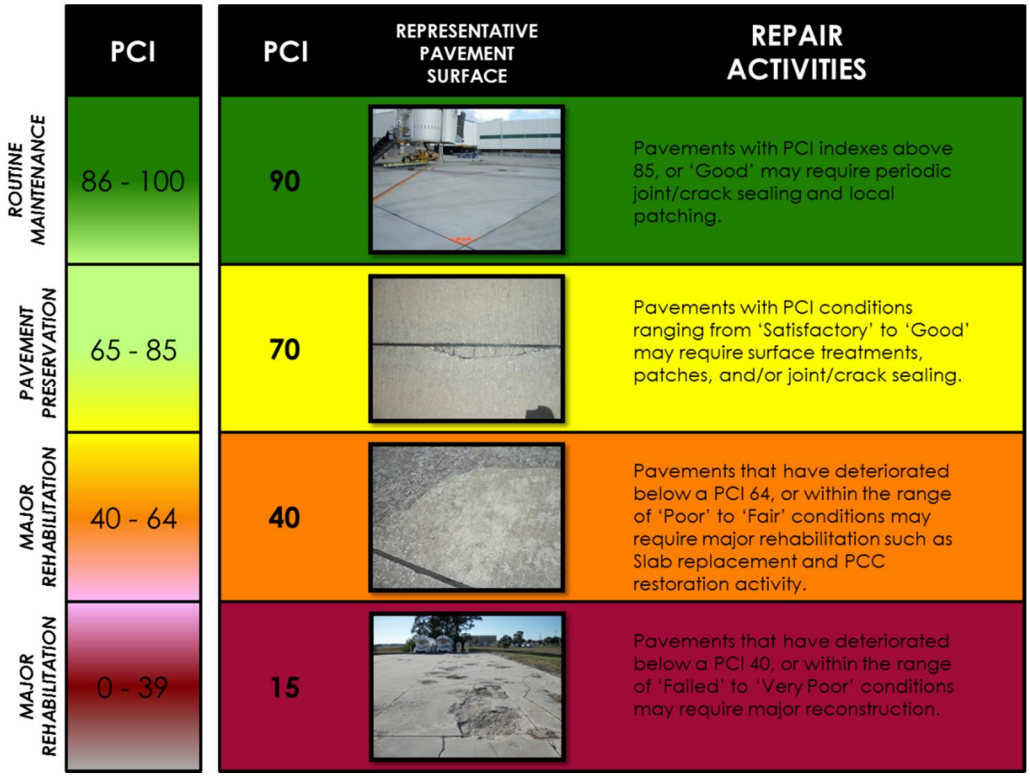


Figure 1-3: Rigid Pavement, Portland Cement Concrete



Using the ASTM D 5340-11 standard seven qualitative ranges, the SAPMP provides a PCI value and a standard qualitative condition rating for the pavement facilities inspected.

2. AIRFIELD PAVEMENT NETWORK DEFINITION AND PAVEMENT INVENTORY

Marco Island Airport (MKY) consists of a single runway; RW 17-35, which is 100-ft wide by 5,000-ft long. Currently the airport has multiple hangar facilities and tie-down spaces located throughout the apron, which was expanded in 2010. Taxiway Alpha, a parallel taxiway which runs along the west side of RW 17-35, was constructed in 2011. Rehabilitation of Runway 17-35 and reconstruction of the North West Apron is anticipated for 2013. With exception to the one Portland Cement Concrete ramp connector, all of the pavement throughout the airport is constructed of Asphalt Concrete.

It is important to note that the aforementioned runway data in addition to the remaining airfield pavement facilities geometric attributes may vary slightly from the geometry used in the condition exhibit in **Appendix B** and the major rehabilitation exhibit in **Appendix F** based on field measurements.

The Marco Island Airport was initially constructed to support plans in developing a resort area south of Naples. Following its completion in 1976, the airport was primarily used by developers who would fly prospective investors over from Miami. In the 1980s, the developers turned the airport over to the State, who in turn, leased it directly to the County. The Collier County Airport Authority assumed the responsibilities of development and management of the airport in 1993.

Today, Marco Island Airport remains publicly owned and operated by Collier County Airport Authority. This airport is designated as a General Aviation airport and is located in District 1 of the Florida Department of Transportation.

2.1 Network Definition

The airfield pavements within each airport network are separated into manageable units within the FDOT SAPMP MicroPAVER database system, organizing pavement data by similar use and constructive history.

Branch and Section Identification

Each airport's airfield pavement network is generally subdivided into separate Branches (runways, taxiways, aprons/ramps, or others) that have distinctly different functional identifications and uses. Each Branch is further subdivided into Sections as defined by pavement location, composition, and construction

history. A Section is typically understood to be a project level subdivision within a Branch feature. Sections are manageable units to organize data collection and are treated individually during the maintenance and major rehabilitation planning process. A pavement rank (primary, secondary, or tertiary) is assigned to each Section based on its importance and type of use to airport operations. The pavement rankings designated for each section at this airport were defined by the previous SAPMP, unless changes were communicated by the airport. These Sections are further subdivided into condition survey sample units based on the methodology described in ASTM D 5340.

Airfield Pavement System Inventory and Network Definition Update

The Airfield Pavement System Inventory and Airfield Pavement Network Definition Exhibits are developed individually for each participating airport. Based on information requested of and provided by the airport, the airfield pavements are evaluated on designation updates, and recent or anticipated pavement construction activity. As mentioned previously, a Section is defined partially by its construction history; this variable that factored in the performance and condition of the pavement section.

The Airfield Pavement System Inventory Exhibit, Figure A-2 in **Appendix A**, is a snapshot of recent and anticipated airfield pavement construction activity communicated by the airport since the last SAPMP update. Construction activities identified include maintenance and repair activity, major rehabilitation, and airfield pavement expansion efforts. Maintenance and repair activity may include; surface treatments, crack sealing, patching, slab replacement, and others. Both maintenance and rehabilitation activities are identified at the pavement section level. This type of work may result in an increase in overall Section PCI since the last inspection. Major rehabilitation efforts may include; asphalt milling and overlay, and full depth pavement reconstruction. This type of effort will result in a resetting of the pavement section PCI value to 100 due to the nature of the work. Lastly, airfield pavement expansions are accounted for as new inventory and assigned a section PCI of 100. Typically the new pavement sections are not inspected due to its condition; however these pavements are incorporated into the SAPMP pavement database. When possible, these changes are reflected in the Airfield Pavement Network Definition Exhibit, in **Appendix A**, prior to the field inspection. The updates are typically discussed and confirmed with airport personnel at the beginning and end of condition survey inspections to ensure accuracy.

The Airfield Pavement Network Definition Exhibit depicts the airport's pavement limits with Branch and Section delineations. This exhibit also includes the subdivision on Section areas into sample units and is used to identify those sample units that are to be inspected. The previous SAPMP Airfield Pavement Network Definition Exhibits were used as a base. Updates and information provided by each airport was reviewed and the exhibits were revised appropriately. Characteristics that are considered include; airfield configuration, branch designations (magnetic declination, Airport Layout Plan updates) and pavement composition. The exhibit serves not only as a primary guide for the airfield inspectors but also allows specific distresses found in the re-inspection report to be geographically located.

Due to recent and anticipated construction efforts; pavement area sections may have been consolidated and created which will affect the total number of sample units to be inspected based upon the methods described in ASTM D 5340 and from the sampling rate schedule. **Table 2-1** summarizes the recent and anticipated airfield pavement construction efforts communicated by the airport.

Table 2-1: Recent and/or Anticipated Airfield Pavement Construction

Construction Year	Section Location	Work Type/Pavement Section
2010	NORTH WEST APRON	NEW PAVEMENT CONSTRUCTION
2011	NEW TAXIWAY A AND APRON	NEW PAVEMENT CONSTRUCTION
2013	RUNWAY 17-35	ASPHALT PAVEMENT REHABILITATION
2013	NORTH WEST APRON	FULL DEPTH PAVEMENT REHABILITATION 4" ASPHALT ON 6" LIMEROCK

Airfield Pavement Network Definition & Geographic Information System (GIS)

As part of this SAPMP update, geographic information system (GIS), global positioning system (GPS), and digital data collection were integrated into the Pavement Inspection Methodology at each airport. Using AutoCAD Civil 3D, ArcMap, ArcPad, and FDOT Survey and Mapping Office Aerial Photography; digital navigation maps have been developed for each airport to represent the SAPMP pavement inventory attributes. These navigation maps were used with field data tablets to assist survey teams as they performed condition inspections by navigating pavement infrastructure and collecting distress data.

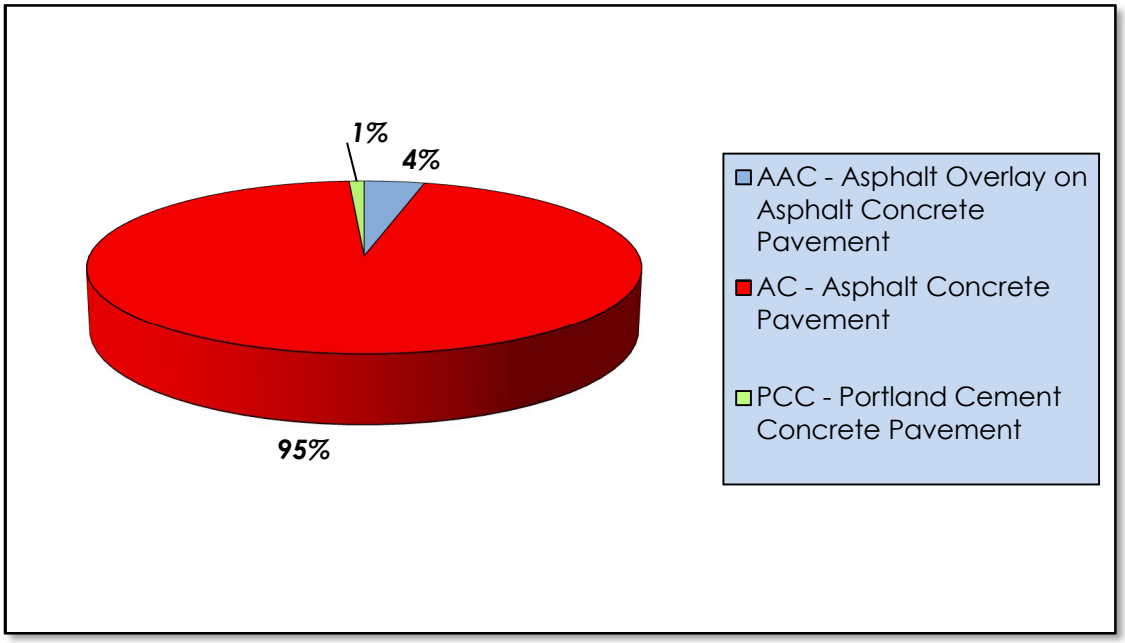
2.2 Pavement Inventory

The detailed pavement inventory database was updated to reflect the Airfield Pavement Network Definition Exhibit, in **Appendix A**, updates and field inspection results. **Table 2-2** and **Figure 2-1** provides a summary of the pavement inventory attributes at Marco Island Airport-(MKY) for this SAPMP update.

Table 2-2: Pavement Inventory Summary

Airfield Pavement Network Definition		
Number of Branches	7	
Number of Sections	15	
Sample Units	47	
Airfield Pavement Use		
Use	**Area (SF)**	**Relative Area (%)**
Runway	500,000	43%
Taxiway	178,010	16%
Apron	469,046	41%
Total =	**1,147,056**	**100%**
Airfield Pavement Type		
Type	**Area (SF)**	**Relative Area (%)**
Asphalt Concrete (AC)	1,098,443	95%
Asphalt Overlay (AAC)	40,732	4%
Portland Cement Concrete (PCC)	7,880	1%
AC over PCC (APC)	0	0%

Figure 2-1: Airfield Pavement Type



Specific details to each Branch and Section such as; name, geometry, age, rank, surface type, and construction history are provided in **Table 2-3**.

Table 2-3: Airfield Pavement Inventory Details

Branch Name	Branch ID	Section ID	True Area (SF)	Section Rank	Surface Type	Last Const. Date	Total Samples Inspected	Total Samples
RUNWAY 17-35	RW 17-35	6115	100,000	P	AC	1/1/1976	5	20
RUNWAY 17-35	RW 17-35	6110	300,000	P	AC	1/1/1976	15	60
RUNWAY 17-35	RW 17-35	6105	100,000	P	AC	1/1/1976	5	20
NORTH APRON	AP N	4215	13,752	P	AAC	1/1/2011	1	3
NORTH APRON	AP N	4210	41,600	P	AC	1/1/2010	1	9
NORTH APRON	AP N	4205	193,812	P	AC	1/1/1975	5	41
NW APRON	AP NW	4120	173,879	S	AC	1/1/2011	4	35
NW APRON	AP NW	4115	8,924	P	AAC	1/1/2011	1	3
NW APRON	AP NW	4110	20,463	P	AC	1/1/1996	1	3

Branch Name	Branch ID	Section ID	True Area (SF)	Section Rank	Surface Type	Last Const. Date	Total Samples Inspected	Total Samples
NW APRON	AP NW	4105	16,615	P	AC	1/1/1996	1	4
TAXIWAY D	TW D	405	9,497	S	AC	1/1/2011	1	2
TAXIWAY C	TW C	305	9,497	S	AC	1/1/2011	1	2
TAXIWAY B	TW B	205	7,880	P	PCC	1/1/1960	1	1
TAXIWAY A	TW A	110	133,080	P	AC	1/11/2011	4	38
TAXIWAY A	TW A	105	18,056	P	AAC	1/1/2011	1	4

Note: If new construction, then survey date = last construction date and PCI is set to 100 by MicroPAVER.
* Sections not surveyed due to reasons such as re-sectioning, no escort, not accessible at the time of survey.

3. AIRFIELD PAVEMENT CONDITION

Airfield pavement distresses and condition were surveyed in accordance with the methods outlined in FAA Advisory Circular 150/5380-6B and ASTM D 5340-11. These procedures define distress type, severity, and quantity for sampling areas within each defined pavement section area to analyze and determine the PCI value and condition rating.

The program has been updated from ASTM D 5340-04, released in 2004, to ASTM D 5340-11, released in 2011, for this SAPMP update. The primary updates include the separation of certain distress types and the addition of new types with corresponding changes to PCI calculation. These changes in distress classification may result in small variances in the PCI values from the previous inspection analyses.

3.1 Inspection Methodology

A pavement condition survey inspection is performed by measuring the amount and severity of defined pavement distresses observed within the boundaries of sample units. These distresses, as defined by ASTM D 5340, are generally caused by traffic fatigue loading, exposure to climate and elements, and other airfield specific factors. This data is collected by field personnel experienced in pavement condition survey inspection. Data collection is then transferred into the FDOT MicroPAVER database system. MicroPAVER is used to calculate PCI values using the methodology described in ASTM D 5340-11. The values are calculated for each sample and extrapolated on a Section level to determine an area-weighted PCI value ranging from 0 to 100 and one of seven condition ratings. **Tables 3-1** and **3-2** describe the distresses as defined by the ASTM D 5340-11 and adopted for the SAPMP procedures.

Table 3-1: Airfield Pavement Distresses for Asphalt Concrete

Code	Distress	Primary Mechanisms
41	Alligator Cracking	Load / Fatigue Failure
42	Bleeding	Construction Quality/ Mix Design
43	Block Cracking	Climate / Age
44	Corrugation	Load / Construction Quality
45	Depression	Subgrade Quality
46	Jet Blast	Aircraft
47	Joint Reflection - Cracking	Climate / Prior Pavement
48	Longitudinal/Transverse Cracking	Climate / Age
49	Oil Spillage	Aircraft / Vehicle
50	Patching	Utility / Pavement Repair
51	Polished Aggregate	Repeated Traffic Loading
52	Raveling	Climate / Load
53	Rutting	Repeated Traffic Loading
54	Shoving	PCC Pavement Growth / Movement
55	Slippage Cracking	Load / Pavement Bond
56	Swelling	Climate / Subgrade Quality
57	Weathering	Climate

Source: U.S. Army CERL, FDOT Airfield Inspection Reference Manual

Table 3-2: Airfield Pavement Distresses for Portland Cement Concrete

Code	Distress	Primary Mechanisms
61	Blow-up	Climate / Alkali Silica Reaction
62	Corner Break	Load Repetition / Curling Stresses
63	Linear Cracking	Load Repetition / Curling Stresses / Shrinkage Stresses
64	Durability Cracking	Freeze-Thaw Cycling
65	Joint Seal Damage	Material Deterioration / Construction Quality
66	Small Patch	Pavement Repair
67	Large Patch/Utility Cut	Utility / Pavement Repair
68	Popout	Freeze-Thaw Cycling
69	Pumping	Load Repetition / Poor Joint Sealant
70	Scaling/Crazing	Construction Quality / Freeze-Thaw Cycling
71	Faulting	Load Repetition / Subgrade Quality
72	Shattered Slab	Overloading
73	Shrinkage Cracking	Construction Quality / Load
74	Joint Spalling	Load Repetition / Infiltration of Incompressible Material
75	Corner Spalling	Load Repetition / Infiltration of Incompressible Material
76	Alkali-Silica Reaction	Construction Quality / Climate

Source: U.S. Army CERL, FDOT Airfield Inspection Reference Manual

3.2 Airfield Pavement Condition Index Rating Results

From the condition survey inspection performed in 2013 at Marco Island Airport, the overall weighted average PCI value is 58 representing a condition rating of FAIR.

The airport's airfield pavements exhibited distresses typically associated with climate and age based distresses. The predominant AC and AAC pavement distresses observed include: block cracking, weathering, raveling, and longitudinal/transverse cracking. The predominate PCC pavement distresses observed includes: shattered slab.

Runway 17-35 exhibited pavement condition indices ranging from 29-30. The pavement on Runway 17-35 exhibited low, medium, and high severity block

cracking; low and medium severity longitudinal/transverse cracking; low and medium severity weathering; and low, medium, and high severity raveling. These distresses are mostly attributed to the climate and age of the pavement.

Taxiway A exhibited pavement condition indices ranging from 94-100. Taxiway A exhibited occasional low severity longitudinal/transverse cracking. The North Apron exhibited broad pavement condition indices ranging from 46-100. This is attributed to the varying construction history of the branch. The North Apron exhibited low and medium severity block cracking; low severity weathering; low severity raveling; low severity longitudinal/transverse cracking; and low severity depression.

The remaining taxiways and aprons appear to be in good overall condition. Most distresses consist of low severity longitudinal/transverse cracking and low severity weathering. These are typical distresses for the pavement's age. Taxiway B is an exception with a pavement condition index of 20. All of the Portland Cement Concrete slabs in Taxiway B are much larger than generally recommended. The slabs have shattered due to construction methods and fatigue loading from aircraft.

Appendix B contains Table B-1 and an Airfield Pavement Condition Index Rating Exhibit, Figure B-1, which depicts the PCI results by Section, and **Appendix C** contains MicroPAVER reports of PCI results by Branch and Section. **Appendix H** includes detailed distress data generated by MicroPAVER for each inspected sample unit.

The pavement condition at Marco Island Airport is represented in **Figure 3-1** in accordance with the condition categories and PCI scale referenced in ASTM D 5340. Further detail is provided in **Table 3-3** which describes the breakdown of the airport's airfield conditions according to area and use.

Appendix B contains Table B-1 summarizes the Section Condition values and the Airfield Pavement Condition Index Rating Exhibit, Figure B-1, that depicts the PCI results by Section. **Appendix H** is dedicated to the reporting of the specific airfield pavement distress data collected at the time of the inspection for this update.

Figure 3-1: Airfield Pavement Condition Index Rating Summary

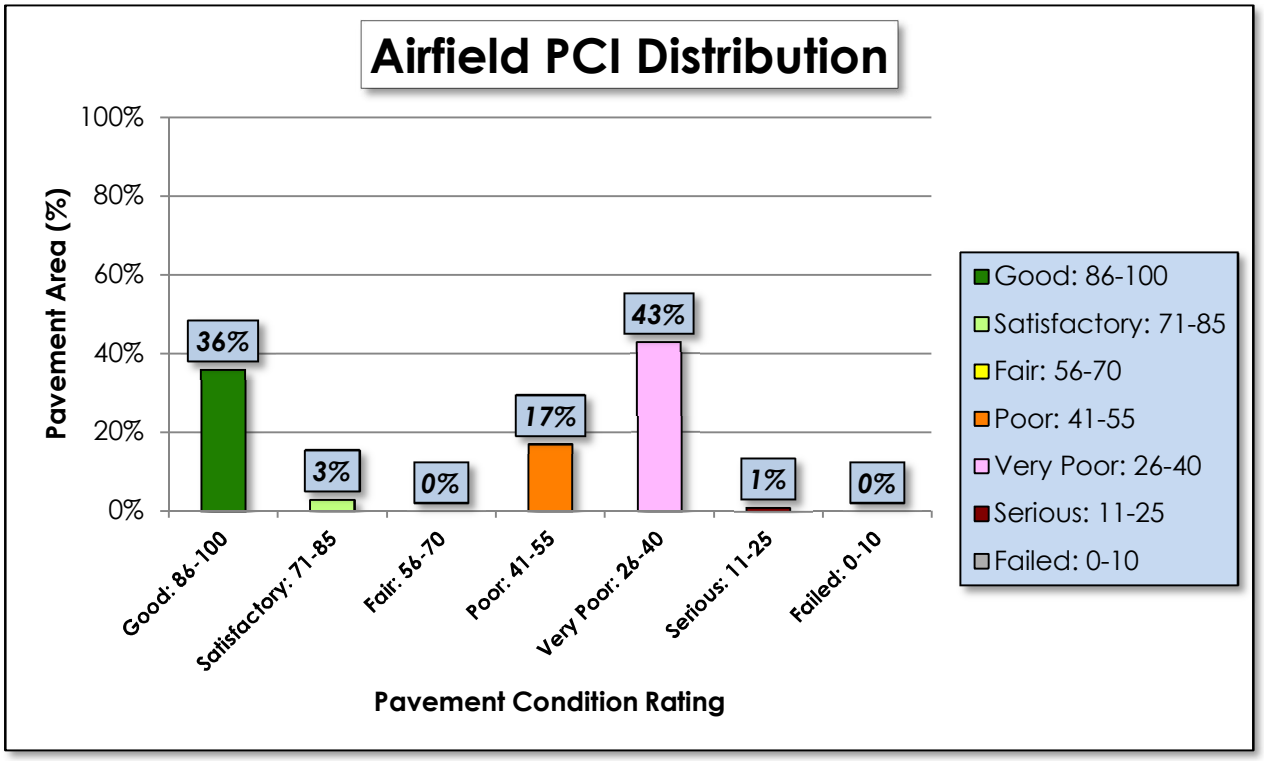


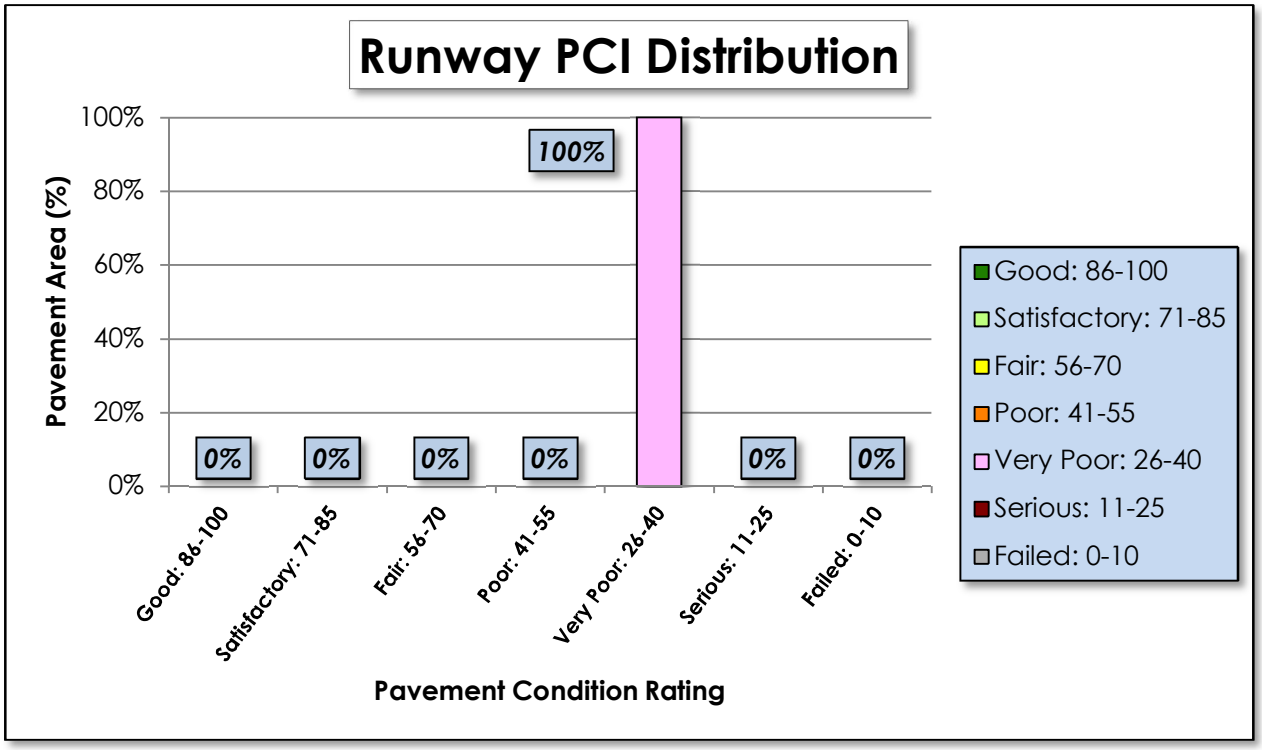
Table 3-3: Pavement Condition Index Rating Summary

Airfield Pavement Use		
Use	**Average Area-Weighted PCI**	**Condition Rating**
Runway	29	Very Poor
Taxiway	95	Good
Apron	76	Satisfactory
Condition Area		
Condition Rating	**Area (SF)**	**Relative Area (%)**
Good	414,996	36%
Satisfactory	30,367	3%
Fair	-	0%
Poor	193,812	17%
Very Poor	500,000	43%
Serious	7,880	1%
Failed	-	0%

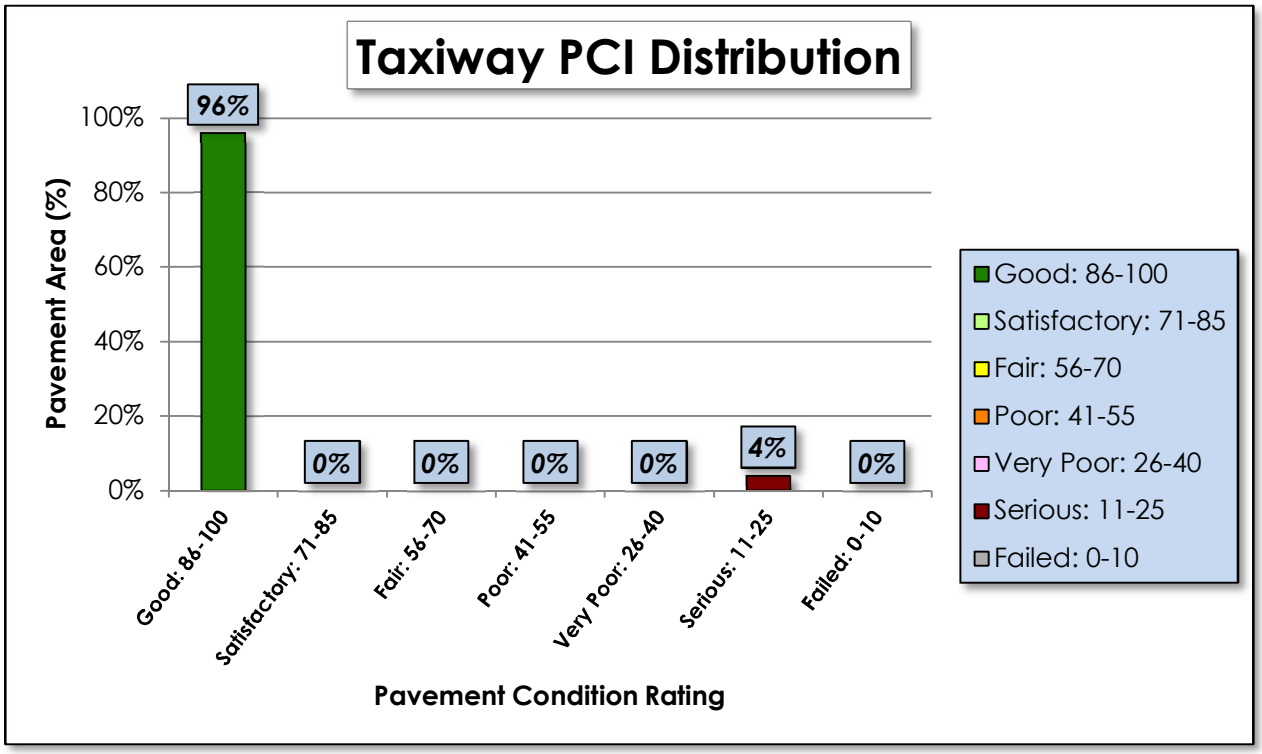
Approximately 39% of the airfield network is in Good and Satisfactory condition; while 61% of the network is in a Poor to Serious condition. **Table 3-3** provides a breakdown of total area for each pavement by condition rating. **Figures 3.2 a, b, c** depict the condition rating of the airfield pavement by Branch Use. Photographs taken during the condition survey inspection are included in **Appendix G**. The photographs included are intended to be representative of the distress observed.

Figure 3-2: Percentage of Pavement Area by Condition Rating by Use

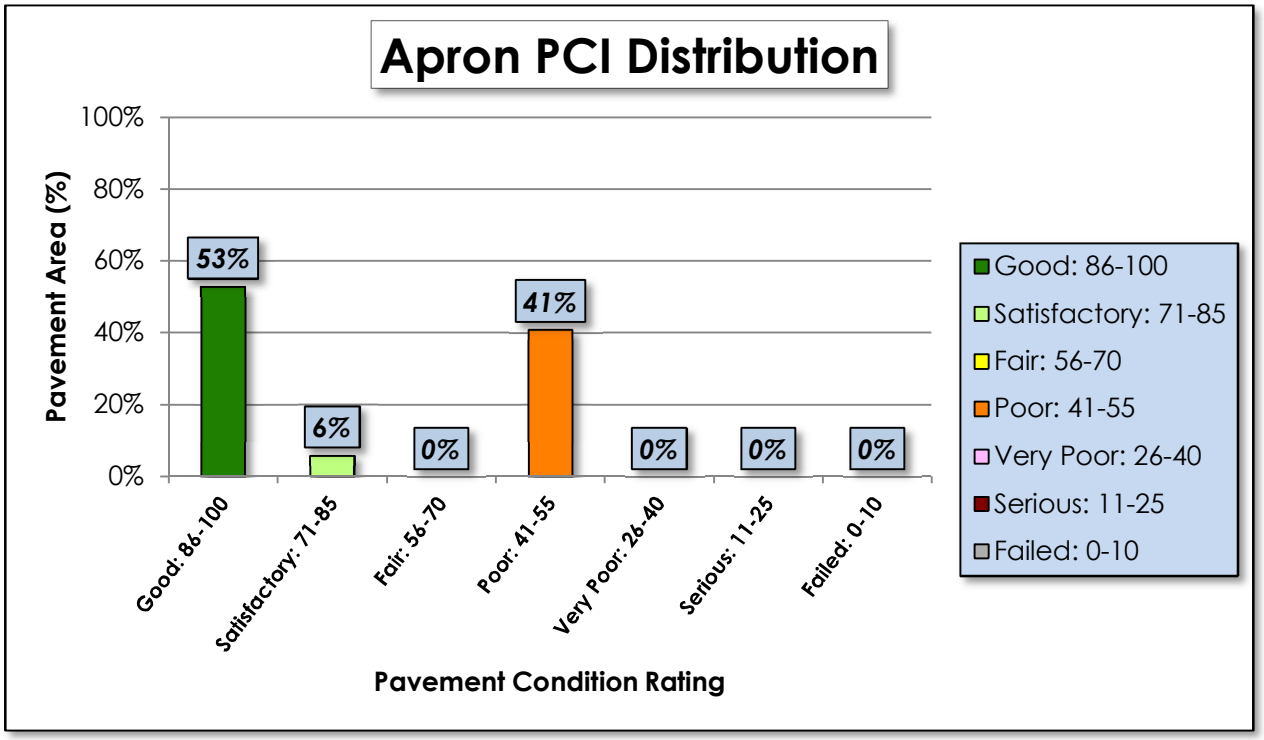
(a) Runway



(b) Taxiway



(c) Apron


Apron PCI Distribution
Pavement Area (%)
100%
80%
60%
40%
20%
0%
53%
6%
0%
41%
0%
0%
0%
Good: 86-100
Satisfactory: 71-85
Fair: 56-70
Poor: 41-55
Very Poor: 26-40
Serious: 11-25
Failed: 0-10
Pavement Condition Rating

4. PAVEMENT PERFORMANCE

Pavement performance models are developed from the distress data collected for the SAPMP for the Florida Airports System. This data is consolidated in a database and organized by inspection date, pavement type, age, pavement use, and airport category. The pavement performance models are used to develop broad prediction models, also known as pavement condition deterioration curves.

The consolidation of the Florida Airports System's pavement infrastructure within the FDOT SAPMP is based on data that have been collected in a consistent method of measurement. The historic pavement condition, or performance trend, has been compiled throughout the system with data from the inception of the SAPMP. This data is processed into models that have been analyzed and developed into prediction curves based upon pavement characteristics. These characteristics include; climate, construction material, and operations. Each model has been developed based on the following criteria:

AIRPORT TYPE (Primary, Regional Reliever, or General Aviation)

>FACILITY USE (Runway, Taxiway, or Apron)

>>FACILITY SURFACE TYPE (AC, AAC, APC, or PCC)

The historic trends of pavement performance at Florida airport facilities for all performance models are consolidated within the program database. This information is utilized in the prediction of pavement performance based on the current PCI determined from the inspections that took place between 2013 and 2014. Major rehabilitation is planned based on the predicted PCI. The intent of this is for both the individual airport and the FDOT District personnel to be aware of anticipated major rehabilitation work based on condition.

Each airport's airfield pavement section condition, for a given inspection year, is one data point that was used as the basis of each performance trend using a performance model based on pavements of similar background. **Figures 4-1, 4-2,** and **4-3** represent the pavement performance prediction at Marco Island Airport based on pavement use. Each figure depicts the FDOT recommended Minimum Service Level PCI value for each pavement type.

Figure 4-1: Runway Pavement Performance Prediction Summary

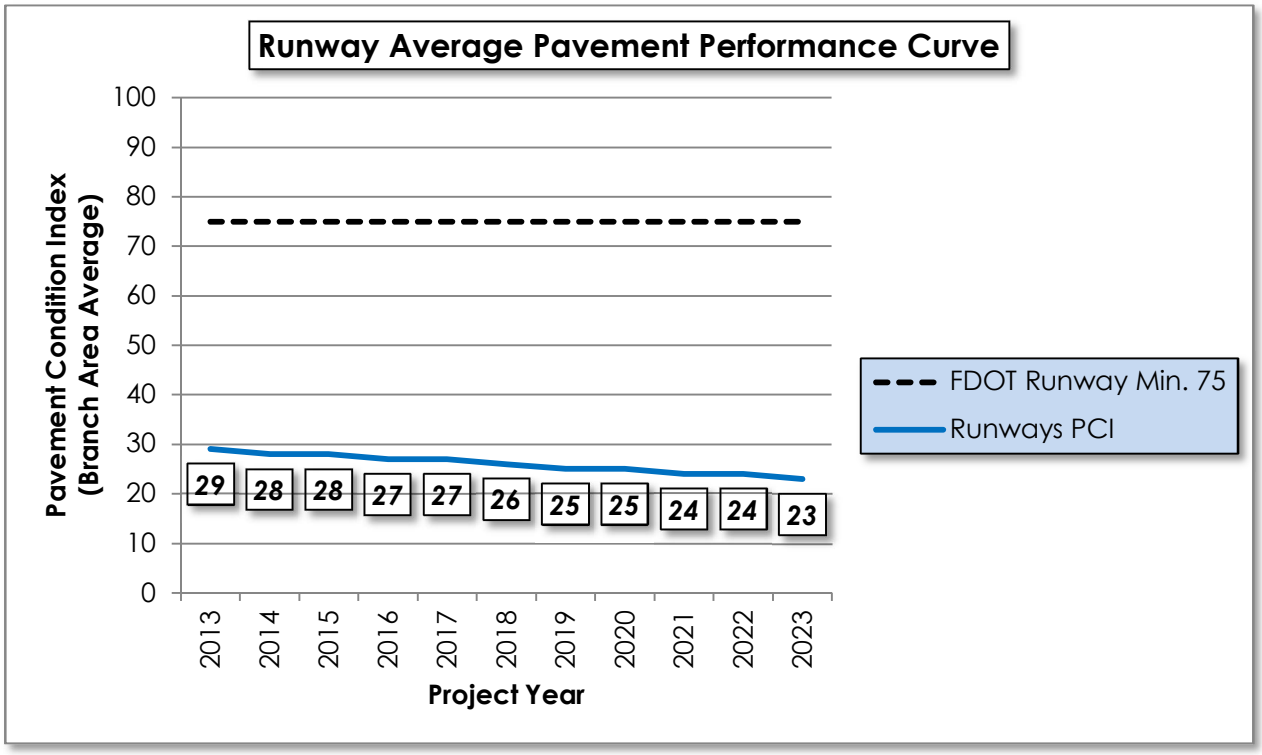


Figure 4-2: Taxiway Pavement Performance Prediction Summary

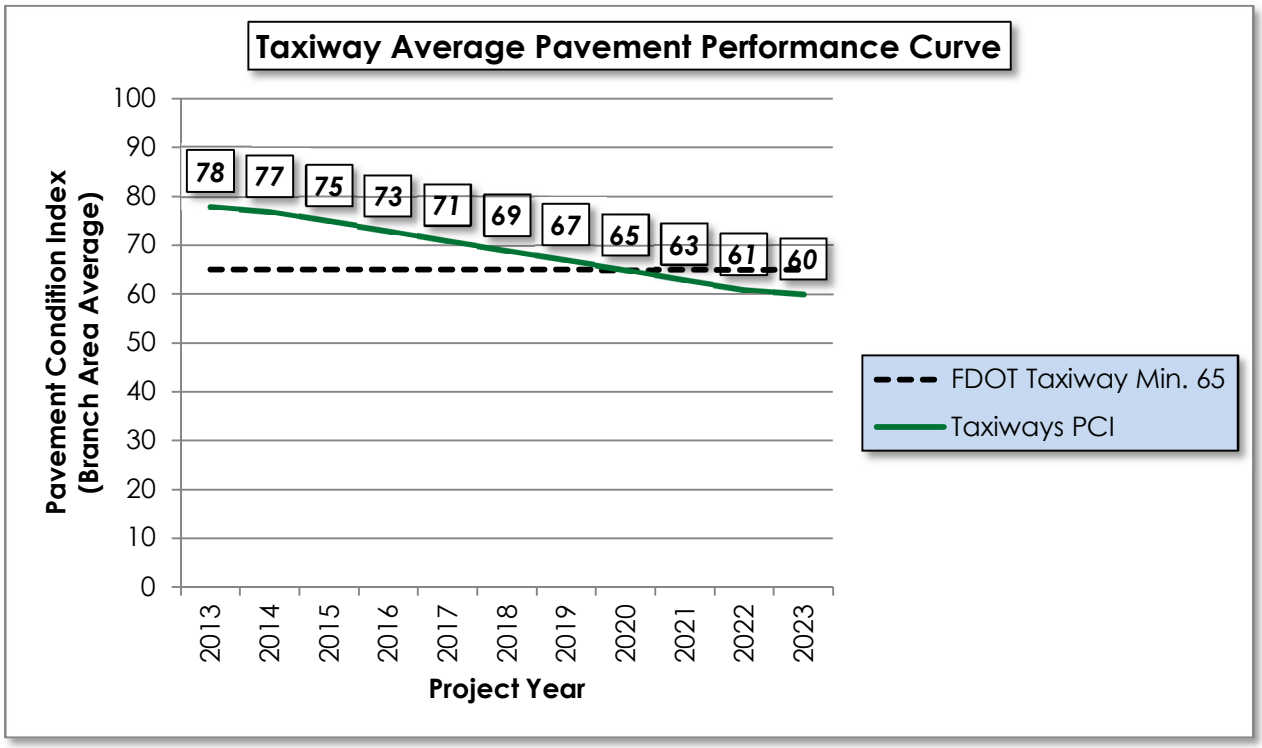
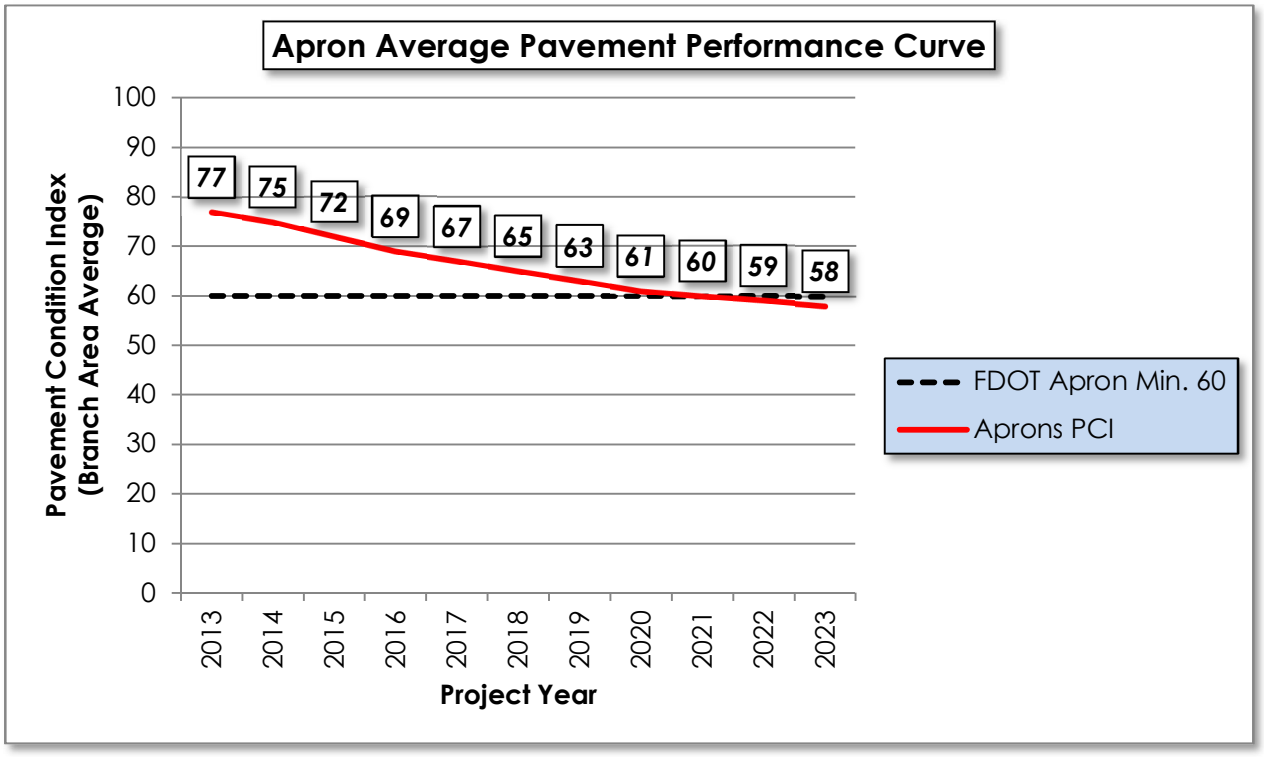


Figure 4-3: Apron Pavement Performance Prediction Summary



Pavement performance modeling to predict the future PCI is primarily done to predict PCI at the Section level for the purpose of planning Major Rehabilitation work. In **Appendix D, Table D-1** represents the predicted area-weighted PCI by Section for the airport's airfield pavement infrastructure.

5. AIRFIELD PAVEMENT MAINTENANCE POLICIES AND COSTS

5.1 Policies

Airfield Pavement Maintenance policies are guidance on pavement construction methods used to develop, maintain, repair, and rehabilitate pavement infrastructure based on distresses encountered during the condition surveys.

Maintenance refers to the repair and preservation-type activities that are applied locally to specific distress types on the pavement. These activities for the SAPMP are considered preventative and corrective in nature and are highly recommended to help improve pavement performance and extend pavement life. The SAPMP maintenance policies are based on the FAA Advisory Circular 150/5380-6B and guidance provided in the FDOT Airfield Pavement Repair Manual.

For the purpose of the SAPMP; the maintenance repair needs that are identified and quantified are based solely on the pavement distresses observed and recorded at the time of the inspection. Based on a specific distress type and severity observed, a particular repair work type is recommended and quantified based on the extrapolated section distresses. The repair program identified is specific to the current distresses. Future maintenance planning budgets are based on this initial determination. **Tables 5-1** and **5-2** provide the list of maintenance activities incorporated into the SAPMP MicroPAVER database to treat specific distress types and severities.

Table 5-1: Recommended AC, AAC, and APC Maintenance and Repair Policy

Surface Type	Distress Code	Distress Name	Severity	Maintenance Work Type	Work Unit
Flexible Asphalt Concrete (AC, AAC, APC)	41	Alligator Cracking	L, M, H	Full Depth Pavement Patch	Square Feet
	42	Bleeding	N/A	Partial Depth Pavement Patch	Square Feet
	43	Block Cracking	L	Seal Coat Treatment	Square Feet
	43	Block Cracking	M, H	Full Depth Pavement Patch	Square Feet
	44	Corrugation	L, M, H	Full Depth Pavement Patch	Square Feet
	45	Depression	L, M, H	Full Depth Pavement Patch	Square Feet
	46	Jet Blast Erosion	L, M, H	Full Depth Pavement Patch	Square Feet
	47	Joint Reflection Cracking	L	Crack Sealing	Linear Feet
	47	Joint Reflection Cracking	M, H	Full Depth Pavement Patch	Square Feet
	48	Longitudinal/Transverse Cracking	L, M, H	Crack Sealing	Linear Feet
	49	Oil Spillage	L, M	Seal Coat Treatment	Square Feet
	49	Oil Spillage	H	Full Depth Pavement Patch	Square Feet
	50	Patch and Utility Patching	M	Crack Sealing	Linear Feet
	50	Patch and Utility Patching	H	Full Depth Pavement Patch	Square Feet
	51	Polished Aggregate	L, M, H	Slurry Seal Coat Treatment	Square Feet
	52	Raveling	L, M	Slurry Seal Coat Treatment	Square Feet
	52	Raveling	H	Partial Depth Pavement Patch	Square Feet
	53	Rutting	L, M, H	Full Depth Pavement Patch	Square Feet
	54	Shoving	L, M, H	Grinding / Removal	Square Feet
	55	Slippage Cracking	L, M, H	Full Depth Pavement Patch	Square Feet
	56	Swelling	M, H	Full Depth Pavement Patch	Square Feet
	57	Weathering	M, H	Seal Coat Treatment	Square Feet

Table 5-2: Recommended PCC Maintenance and Repair Policy

Surface Type	Distress Code	Distress Name	Severity	Maintenance Work Type	Work Unit
Rigid Pavement (PCC)	61	Blowup	L, M, H	Slab Replacement / Full Depth Patch	Square Feet
	62	Corner Break	L, M, H	Partial Patch - PCC	Square Feet
	63	Longitudinal/Transverse/Diagonal Cracking	H	Crack Sealing - PCC	Linear Feet
	64	Durability Cracking	M, H	Slab Replacement / Full Depth Patch	Square Feet
	65	Joint Seal Damage	L, M, H	Joint Seal Repair (Local)	Linear Feet
	66	Patching, Small	M, H	Slab Replacement / Full Depth Patch	Square Feet
	67	Patching, Large	M, H	Slab Replacement / Full Depth Patch	Square Feet
	68	Popouts	L	Crack Sealing - PCC	Linear Feet
	69	Pumping	L, M, H	Slab Stabilization / Slab Jacking	Square Feet
	70	Scaling/Map Cracking/Crazing	L, M	Micro-mill and Seal - PCC	Square Feet
	70	Scaling/Map Cracking/Crazing	H	Slab Replacement / Full Depth Patch	Square Feet
	71	Settlement / Faulting	L	Micro-mill and Seal - PCC	Square Feet
	71	Settlement / Faulting	M, H	Slab Stabilization / Slab Jacking	Square Feet
	72	Shattered Slab	L, M, H	Slab Replacement / Full Depth Patch	Square Feet

Surface Type	Distress Code	Distress Name	Severity	Maintenance Work Type	Work Unit
	73	Shrinkage Cracks	N/A	Crack Sealing - PCC	Linear Feet
	74	Longitudinal/Transverse Joint Spalling	L, M, H	Partial Patch - PCC	Square Feet
	75	Corner Spalling	L, M, H	Partial Patch - PCC	Square Feet
	76	Alkali-Silica Reaction	L	Seal Coat Treatment	Square Feet
	76	Alkali-Silica Reaction	M	Micro-mill and Seal - PCC	Square Feet
	76	Alkali-Silica Reaction	H	Slab Replacement / Full Depth Patch	Square Feet

Though proactive pavement maintenance and preservation is highly recommended in an APMS; it is recognized that pavement that has deteriorated below a certain PCI will require a major rehabilitation rather than localized maintenance and repair work. Major rehabilitation is recommended when the pavement condition decreases below a critical point such that the deterioration is extensive or the rate of deterioration is so great that maintenance repair efforts are no longer cost-efficient. This critical point is called "Critical PCI". The critical PCI levels for different pavement and branch types were established by the FDOT and were used in this update to develop a maintenance and major rehabilitation plan for the airport. Sections that are above the "Critical PCI" levels will be recommended for maintenance, repair, and preservation treatments, assuming there are no significant load-related distresses. For those Sections below the Critical PCI, the recommended action will consist of major rehabilitation work. This approach is used for the current Section's PCI value and the predicted PCI value for future rehabilitation.

The FDOT has recommended minimum service level PCI for airports based on pavement facility use, airport type, and expected loading frequency. This minimum service level PCI is recommended to ensure the pavement provides a safe operational surface and efficiently uses maintenance and rehabilitation budgets. Separately, the Critical PCI is a value based on historic pavement performance trends and costs. It is at a PCI value of 65, for most airports, at which major rehabilitation is recommended over maintenance level efforts.

Table 5-3 identifies the FDOT recommended PCI by use and the critical PCI value for the most important pavements at the airport. This is due to the condition of the pavement and the cost effectiveness of the work. A very important concept of a good pavement management system is the proactive preservation of pavements that are above Critical PCI condition. Conversely, allowing pavement to deteriorate beyond maintenance and performing "worst first" major rehabilitation may cost much more over the life of a pavement.

Table 5-3: Critical and Minimum Service Level PCI for General Aviation Airports

Use	FDOT Recommended PCI	Critical PCI
Runway	75	65
Taxiway	65	65
Apron	60	65

Based on historic trends of pavement performance and industry standard practices in pavement maintenance and rehabilitation, the SAPMP included general guidance on construction activity based on condition PCI, as shown on **Table 5-4**. It is recommended that further investigation of underlying pavement conditions is performed at the design phase.

Table 5-4: Maintenance and Major Rehabilitation Activity Based on PCI

Category	Activity	PCI Range
Maintenance	▪ Crack Sealing (AC/PCC) ▪ Partial Depth Patching (AC) ▪ Full Depth Patching (AC/PCC) ▪ Surface Treatment (AC)	75 - 90
Rehabilitation	▪ Mill and Overlay (AC) ▪ Concrete Pavement Restoration (PCC)	40 - 74
	▪ Full Depth Pavement Reconstruction	0 - 39

The PCI standard scale ranges from a value of 0, typically representing a pavement in a failed condition, to a value of 100 which typically represents a pavement in new or good condition. Generally, airfield pavement sections with

a PCI of 75 or higher that are not exhibiting distresses due to aircraft loading will benefit from maintenance activities such as crack sealing, patching, and surface treatments. Pavement sections with PCI values within the range of 40 to 74 may require major rehabilitation, such as a mill and overlay. Lastly, pavement sections with a PCI value of 40 or less are recommended to undergo pavement reconstruction. Generally pavement reconstruction is the only practical means of restoration due to the substantial distresses observed in the pavement structure. Since PCI values are based solely on the visual determination of pavement distresses and deterioration, this method does not provide a direct measure of structural integrity.

5.2 Unit Costs

The FDOT SAPMP developed and updated the maintenance and major rehabilitation costs based on public cost databases for airport and highway pavement construction. Additionally, cost data collected from FDOT and FAA sponsored projects in the Florida Airports System were utilized to identify construction cost trends across the state.

The maintenance, repair, and preservation activity costs have been updated and developed using readily available construction cost data at the time of this update. The costs depicted in this report for both maintenance and major rehabilitation are intended for planning purposes.

5.3 Maintenance, Repair, and Major Rehabilitation

FDOT recognizes that although pavement mill and overlay is recommended for flexible asphalt concrete pavement within a PCI range from 40 to 74, it is conceivable that airports may not have adequate funding to perform this type of major rehabilitation. A comprehensive surface treatment; such as GSB-88 and Microsurfacing, as a maintenance rehabilitation activity, can be used in lieu of asphalt concrete pavement mill and overlay. However, it should be understood that these measures provide only a short term extension of pavement life. While the cost of surface treatments are significantly lower than that of pavement mill and overlay, it is not intended or implied to be a full rehabilitative measure for long term benefit. **Table 5-5** and **Table 5-6** provide budget costs associated with the work types shown in the table.

Table 5-5: AC Maintenance Unit Costs

Surface Type	Maintenance Work Type	Cost	Work Unit
Flexible Asphalt Concrete (AC, AAC, APC)	Full Depth Pavement Patch	$5.00	Square Feet
	Partial Depth Pavement Patch	$3.00	Square Feet
	Seal Coat Treatment	$0.55	Square Feet
	Crack Sealing	$2.75	Linear Feet
	Slurry Seal Coat Treatment	$0.55	Square Feet
	Grinding / Removal	$2.10	Square Feet

Table 5-6: PCC Maintenance Unit Costs

Surface Type	Maintenance Work Type	Cost	Work Unit
Rigid Pavement (PCC)	Slab Replacement / Full Depth Patch	$45.00	Square Feet
	Partial Patch - PCC	$19.10	Square Feet
	Crack Sealing - PCC	$4.25	Linear Feet
	Joint Seal Repair (Local)	$3.00	Linear Feet
	Slab Stabilization / Slab Jacking	$45.00	Square Feet
	Micro-mill and Seal - PCC	$1.00	Square Feet
	Seal Coat Treatment	$1.00	Square Feet

As part of the SAPMP update, the distress data observed at each airport during the inspection is extrapolated on a section basis to make maintenance recommendations. These recommendations are a direct result of the distress types, severities, and quantities observed at the time of inspection. The

maintenance recommendations and planning costs are correlated with the airport's airfield pavement network's overall area weighted PCI and used to plan future maintenance costs. Future maintenance costs are planning budgets that are not specific to a pavement section, but are estimates for the entire airfield. **Table 5-7** provides budget costs associated with the rehabilitation activities.

Table 5-7: Rehabilitation Activities and Unit Costs by Condition for General Aviation Airports

Category	Activity	PCI Range	Cost/SqFt
Rehabilitation	▪ Mill and Overlay (AC)	40 - 74	$8.00
	▪ Concrete Pavement Restoration (PCC)		$10.00
	▪ Full Depth Pavement Reconstruction	0 - 39	$15.00

A cost scale has been developed based on PCI to develop planning level budgets for the airfield pavements. The cost scale is adjusted by project year based on an assumed inflation rate of 3%. In **Appendix E**, **Table E-1** summarizes the Year-1 maintenance and repair recommendations based on the most recent inspection. The summary in **Table E-1** does not take into account any rehabilitation activities, but rather summarizes preventative activities for all PCI ranges, including below critical PCI sections.

6. MAJOR PAVEMENT REHABILITATION NEEDS

As part of the SAPMP, major pavement rehabilitation planning is developed based on current and predicted PCI in comparison with the Critical PCI. The Critical PCI has been determined based on the historic trends of pavement condition relative to the benefit of maintenance and repair activities. Pavement sections determined to have a PCI less than that of the Critical PCI are assumed to have deteriorated to a point at which maintenance and repair level activity would provide little benefit.

The objective of the major pavement rehabilitation needs analysis is to provide planning level projects within an airport's airfield pavement network. Major rehabilitation activities are recommended when a pavement section has deteriorated below the Critical PCI value from a functionality perspective. In addition, major rehabilitation is also recommended when the Section PCI is above the Critical PCI but the Section has load-related PCI distresses. However, most major rehabilitation work is recommended when the Section PCI is below the Critical PCI, which is when maintenance and repair level activities are not considered to be cost effective.

Major rehabilitation is identified within the SAPMP as major construction activity that would result in an improvement or "resetting" of the pavement section's PCI to a value of 100. Such activities could include; mill and hot-mix asphalt overlay and re-construction. This analysis was conducted with no constraints to budgets as a means to identify all pavement projects based on Critical PCI for a 10-year duration. It is recommended that the airport use this as a planning tool for future project development and prioritization. **Table 6-1** depicts the major rehabilitation work identified on the pavement section level based on current and predicted pavement PCI.

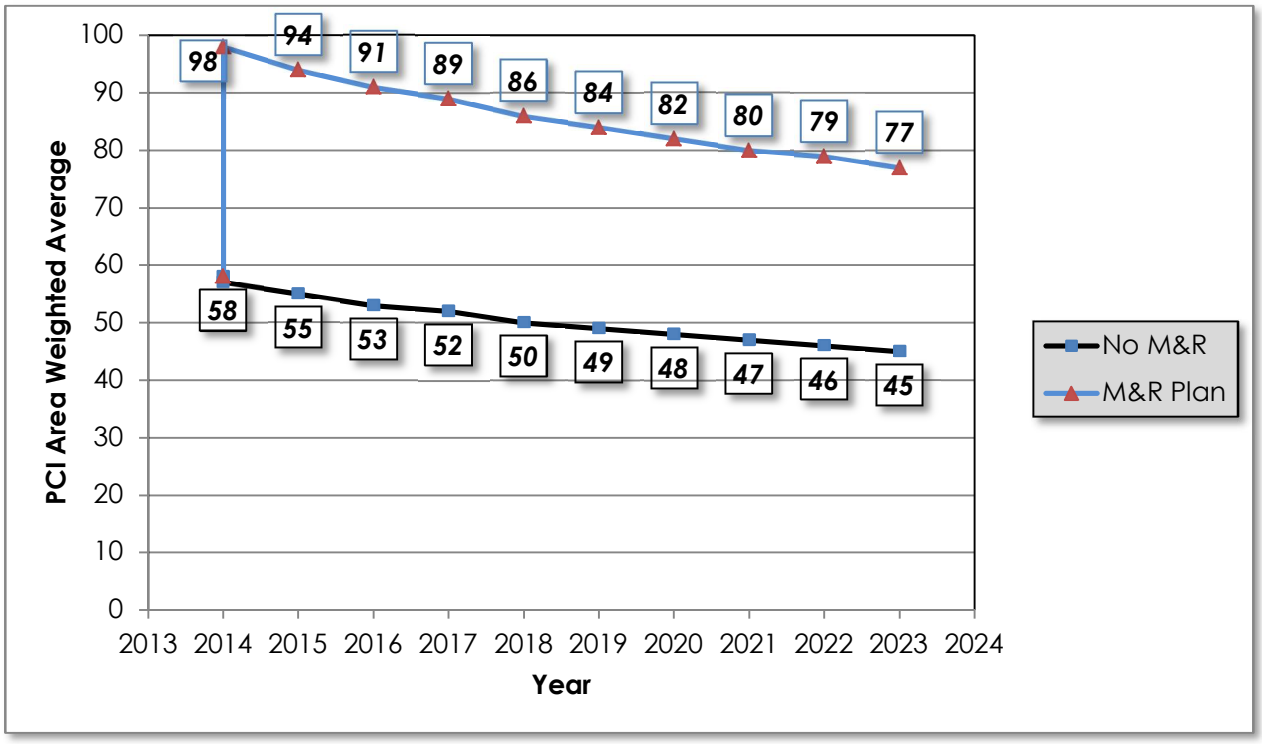
Table 6-1: Summary of Major Rehabilitation

Year	Branch Name	Section ID	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2014	RUNWAY 17-35	6115	$ 1,500,000.36	30	Reconstruction	100
2014	RUNWAY 17-35	6110	$ 4,500,001.06	29	Reconstruction	100
2014	RUNWAY 17-35	6105	$ 1,500,000.36	29	Reconstruction	100
2014	NORTH APRON	4205	$ 2,372,265.14	46	Mill and Overlay	100
2014	TAXIWAY B	205	$ 118,200.03	20	Reconstruction	100
2023	NORTH APRON	4215	$ 179,427.18	64	Mill and Overlay	100
		Total =	**$10,169,894.13**			

**Costs are adjusted for inflation at 3%.*

The 10-year major rehabilitation program addresses those pavement sections that have a current or project PCI that is below the Critical PCI of 65 during the 10-year analysis period. The unconstrained or "unlimited budget" Major Rehabilitation Program is compared to a "No Major Rehabilitation Program" scenario in **Figure 6-1**. As shown, if no major rehabilitation work is completed in the next 10 years at your airport, the average PCI may be 32 points less than a plan that provides timely repairs to the airfield pavements.

Figure 6-1: 10-Year Major Rehabilitation Budget Scenario Analysis



7. PREVENTATIVE AND MAJOR REHABILITATION PLANNING

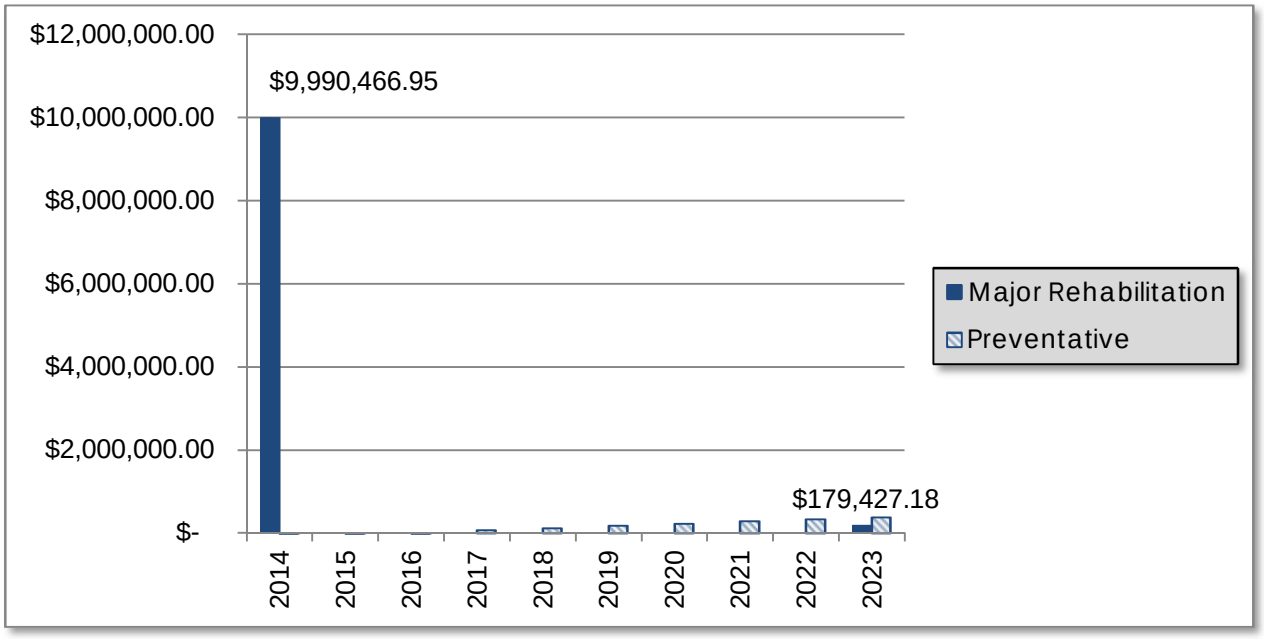
The preventative and major rehabilitation results include activities that are based on distresses observed and unconstrained by budget limits. FDOT recognizes that the projects identified as Year-1 needs in 2013, based on condition, may exceed a typical annual budget level. It is recommended that each airport further evaluate each project's feasibility and desirability based on the airport's future development plans and budgeting scenarios.

In an effort to identify appropriate budget levels, the 10-year Preventative and Major Rehabilitation analysis evaluated projected budget needs based on predicted PCI of each pavement section. **Table 7-1** and **Figure 7-1**provides a summary of the expected preventative and major rehabilitation for each program year.

Table 7-1: 10-Year Preventative and Major Rehabilitation Summary

Program Year	Preventative	Major Rehabilitation	Total Year Costs
2014	$ 8,224.88	$ 9,990,466.95	$ 9,998,691.83
2015	$ 9,324.86	$ -	$ 9,324.86
2016	$ 32,290.52	$ -	$ 32,290.52
2017	$ 76,031.14	$ -	$ 76,031.14
2018	$ 126,615.42	$ -	$ 126,615.42
2019	$ 178,517.97	$ -	$ 178,517.97
2020	$ 233,911.51	$ -	$ 233,911.51
2021	$ 288,126.11	$ -	$ 288,126.11
2022	$ 339,845.74	$ -	$ 339,845.74
2023	$ 381,435.29	$ 179,427.18	$ 560,862.47
		Total =	**$ 11,844,217.57**

Figure 7-1: 10-Year Preventative and Major Rehabilitation Summary



According to the most recent inspections at the time of this update; the following pavement sections were identified as a Year-1 need for major rehabilitation:

- Runway 17-35 – Sections 6105, 6110, and 6115.
  - Reconstruction attributed to distresses related to climate and age of pavement.
- North Apron – Section 4205
  - Reconstruction attributed to distresses related to climate and age of pavement.
- Taxiway B – Section 205
  - Reconstruction attributed to distresses related to climate and age of pavement.

Appendix E summarizes the preventative repair recommendations for Year-1 and Appendix F provides an exhibit, Airfield Pavement Major Rehabilitation, that depicts the recommended major rehabilitation on the airfield pavement network according to work type and year.

8. VISUAL AID EXHIBITS

8.1 Airfield Pavement Network Definition Exhibit

The Airfield Pavement Network Definition Exhibit in **Appendix A** depicts the airfield layout in a manner that defines the airfield pavement infrastructure as branches, sections, and sample units in accordance with the ASTM D 5340-11. The exhibits are prepared and updated with information provided by the airport and from aerial imagery from the FDOT Surveying and Mapping publications.

8.2 Airfield Pavement System Inventory Exhibit

The Airfield Pavement System Inventory Exhibit in **Appendix A** depicts any recent airfield pavement construction activity reported by the airport. The exhibit is intended to identify pavement sections that may have changed in geometry and pavement composition that would affect the section delineation. The information provided in the Airport Response Form was used as the basis of the changes and confirmed with the airport personnel at the time of inspection.

8.3 Airfield Pavement Condition Index Rating Exhibit

The Airfield Pavement Condition Index Rating Exhibit in **Appendix B** has been prepared based on the section condition analysis of the distress data collected during the recent condition index rating survey. The exhibit graphically depicts the inventory with associated condition rating colors and PCI values.

8.4 Airfield Pavement Major Rehabilitation Exhibit

The Airfield Pavement Major Rehabilitation Exhibit in **Appendix F** has been prepared based on the section pavement performance model and major rehabilitation analysis. The exhibit graphically depicts the inventory with associated rehabilitation activity, program year, and the planning level costs.

8.5 Airfield Pavement Condition Survey Inspection Photographs

During the field condition survey inspection; inspectors photographed representative distress types observed. Select photographs are provided in **Appendix G** to provide visual support to special pavement conditions or distresses observed.

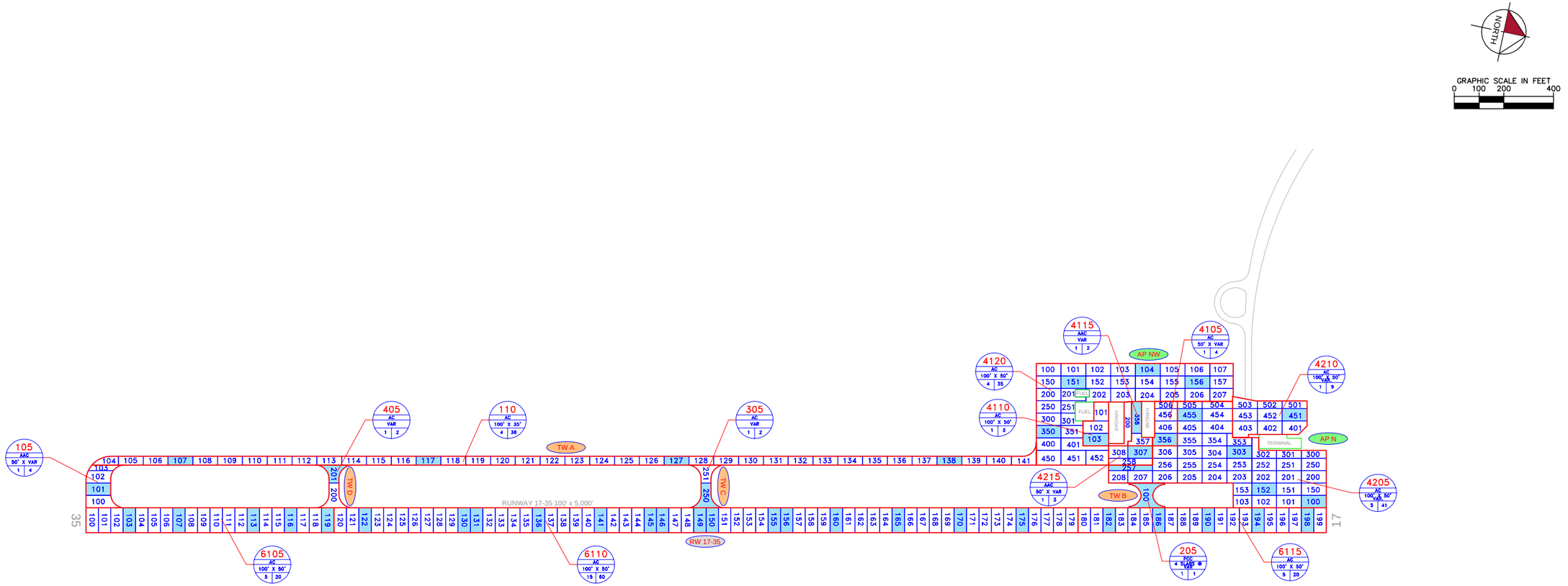
9. RECOMMENDATIONS

The following recommendations were made based on the 2013 condition survey inspection, condition analysis, and maintenance/rehabilitation analysis results:

- **Runway 17-35 –** Sections 6105, 6110, and 6115.
  - Reconstruction attributed to distresses related to climate and age of pavement.
- **North Apron –** Section 4205
  - Reconstruction attributed to distresses related to climate and age of pavement.
- **Taxiway B –** Section 205
  - Reconstruction attributed to distresses related to climate and age of pavement.

APPENDIX A

- AIRFIELD PAVEMENT NETWORK DEFINITION EXHIBIT
- AIRFIELD PAVEMENT SYSTEM INVENTORY EXHIBIT
- PAVEMENT GEOMETRY INVENTORY
- WORK HISTORY REPORT



LEGEND

- RW 13-31 — TYPICAL RUNWAY BRANCH ID
- TW A — TYPICAL TAXIWAY BRANCH ID
- AP S — TYPICAL APRON BRANCH ID
- 4105 AC 100' x 50' 5 14 — SECTION NUMBER; PAVEMENT TYPE; TYPICAL SAMPLE UNIT INFORMATION; FLEXIBLE (AC) PAVEMENT LENGTH & WIDTH; RIGID (PCC) PAVEMENT NO. OF SLABS AND SLAB SIZE; NUMBER OF SAMPLE UNITS IN SECTION; NUMBER OF SAMPLE UNITS TO BE INSPECTED
- 100 — INSPECTED SAMPLE UNITS. GPS COORDINATES ARE AT THE CENTROID OF THE SAMPLE UNIT.

TOTAL SAMPLES INSPECTED = 47

RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.

NUMBER	DATE	REVISIONS

DESIGNED:	KHA	DRAWN:	KHA	CHECKED:	KHA	DATE:	2013

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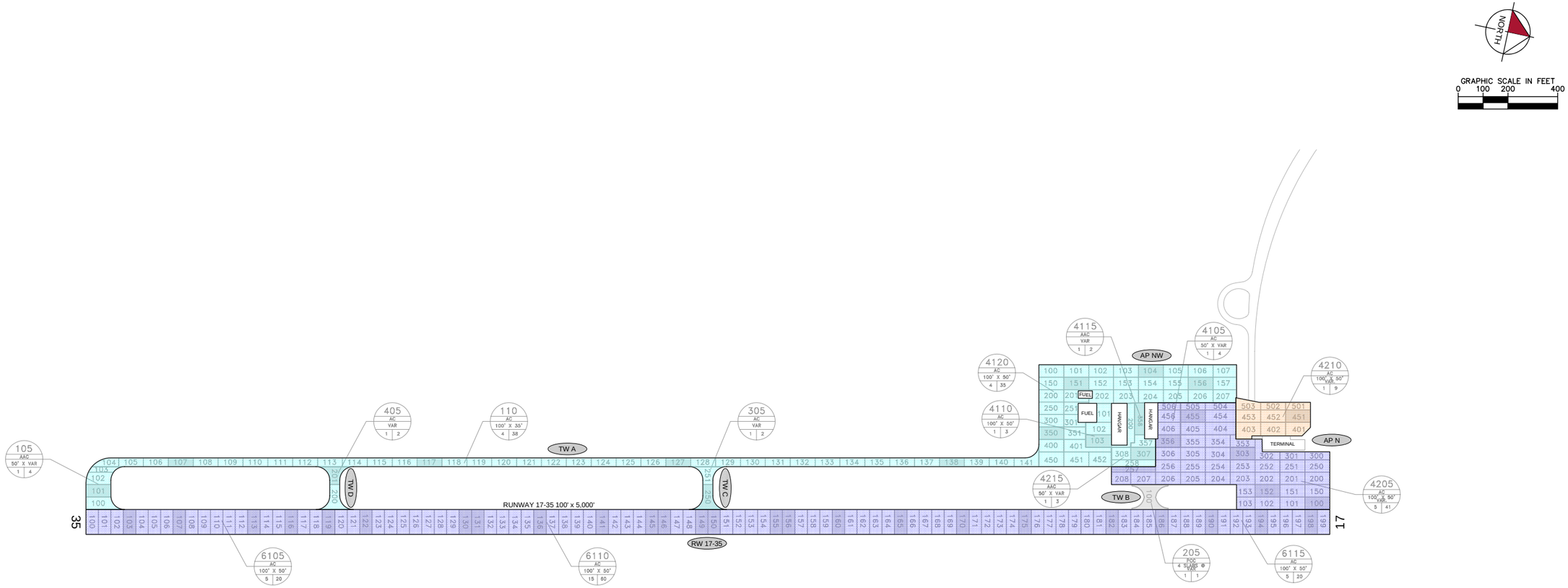
OFFICE OF FREIGHT, LOGISTICS & PASSENGER OPERATIONS

AIRFIELD PAVEMENT NETWORK DEFINITION EXHIBIT

MARCO ISLAND AIRPORT
COLLIER COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION AND SPACEPORT OFFICE

IDENTIFIER: MKY
FDOT DISTRICT: 1



LEGEND

- PROJECTS YEAR 2010
- PROJECTS YEAR 2011
- PROJECTS YEAR 2012
- PROJECTS YEAR 2013
- PROJECTS YEAR 2014
- PROJECTS YEAR 2015
- PROJECTS YEAR 2016
- PROJECTS YEAR 2017
- PROJECTS YEAR 2018
- PROJECTS YEAR 2019

CONSTRUCTION SINCE LAST INSPECTION & ANTICIPATED CONSTRUCTION ACTIVITY

CONSTRUCTION YEAR	LOCATION	WORK TYPE / PAVEMENT SECTION
2010	NORTH WEST APRON	NEW PAVEMENT CONSTRUCTION
2011	NEW TAXIWAY A AND APRON	NEW PAVEMENT CONSTRUCTION
2013	RUNWAY 17-35	ASPHALT PAVEMENT REHABILITATION
2013	APRON	FULL DEPTH PAVEMENT REHABILITATION 4" ASPHALT ON 6" LIMEROCK

RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.

NUMBER	DATE	REVISIONS

DESIGNED:	KHA	DRAWN:	KHA	CHECKED:	KHA	DATE:	2013

K:\AIRPORTS\MARCO ISLAND EXECUTIVE AIRPORT\EXHIBITS\2013-MKY-INVENTORY.dwg PLOTTED: November 15, 2013 - 2:10 PM, BY Dana, Art

OFFICE OF FREIGHT, LOGISTICS & PASSENGER OPERATIONS

AIRFIELD PAVEMENT SYSTEM INVENTORY EXHIBIT

MARCO ISLAND AIRPORT
COLLIER COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION AND SPACEPORT OFFICE

IDENTIFIER: MKY
FDOT DISTRICT: 1

Table A-1: Pavement Geometry Inventory

Branch Name	Branch ID	Branch Use	Section ID	Length (FT)	Width (FT)	True Area (FT^2)	Section Rank	Surface Type	Last Const. Date	Last Insp. Date	Total Samples
RUNWAY 17-35	RW 17-35	RUNWAY	6115	1,000	100	100,000	P	AC	1/1/1976	5/13/2013	20
RUNWAY 17-35	RW 17-35	RUNWAY	6110	3,000	100	300,000	P	AC	1/1/1976	5/13/2013	60
RUNWAY 17-35	RW 17-35	RUNWAY	6105	1,000	100	100,000	P	AC	1/1/1976	5/13/2013	20
NORTH APRON	AP N	APRON	4215	177	78	13,752	P	AAC	1/1/2011	5/13/2013	3
NORTH APRON	AP N	APRON	4210	300	135	41,600	P	AC	1/1/2010	5/13/2013	9
NORTH APRON	AP N	APRON	4205	878	232	193,812	P	AC	1/1/1975	5/13/2013	41
NW APRON	AP NW	APRON	4120	794	153	173,879	S	AC	1/1/2011	5/13/2013	35
NW APRON	AP NW	APRON	4115	179	40	8,924	P	AAC	1/1/2011	5/13/2013	3
NW APRON	AP NW	APRON	4110	90	199	20,463	P	AC	1/1/1996	5/13/2013	3
NW APRON	AP NW	APRON	4105	179	91	16,615	P	AC	1/1/1996	5/13/2013	4
TAXIWAY D	TW D	TAXIWAY	405	172	40	9,497	S	AC	1/1/2011	5/13/2013	2
TAXIWAY C	TW C	TAXIWAY	305	172	40	9,497	S	AC	1/1/2011	5/13/2013	2
TAXIWAY B	TW B	TAXIWAY	205	100	46	7,880	P	PCC	1/1/1960	5/13/2013	1
TAXIWAY A	TW A	TAXIWAY	110	3,731	35	133,080	P	AC	1/11/2011	5/13/2013	38
TAXIWAY A	TW A	TAXIWAY	105	173	100	18,056	P	AAC	1/1/2011	5/13/2013	4

Note: If new construction, then survey date = last construction date and PCI is set to 100 by MicroPAVER.
* Sections not surveyed due to reasons such as re-sectioning, no escort, not accessible at the time of survey.

Network: MKY **Branch**: AP N (NORTH APRON) **Section:** 4205 **Surface:** AC
L.C.D.: 01/01/1975 **Use:** APRON **Rank** P **Length:** 878.00 Ft **Width:** 232.00 Ft **True Area:** 193,812.45 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1975	IMPORTED	BUILT			True	EST 1975 AC

Network: MKY **Branch**: AP N (NORTH APRON) **Section:** 4210 **Surface:** AC
L.C.D.: 01/01/2010 **Use:** APRON **Rank** P **Length:** 300.00 Ft **Width:** 135.00 Ft **True Area:** 41,600.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2010	INITIAL	Initial Construction	$0	0.00	True	

Network: MKY **Branch**: AP N (NORTH APRON) **Section:** 4215 **Surface:** AAC
L.C.D.: 01/01/2011 **Use:** APRON **Rank** P **Length:** 177.44 Ft **Width:** 77.50 Ft **True Area:** 13,751.60 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2011	ML-OV	Mill and Overlay	$0	0.00	True	
01/01/1975	NU-IN	New Construction - Initial	$0	0.00	True	

Network: MKY **Branch**: AP NW (NW APRON) **Section:** 4105 **Surface:** AC
L.C.D.: 01/01/1996 **Use:** APRON **Rank** P **Length:** 179.35 Ft **Width:** 90.94 Ft **True Area:** 16,614.98 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1996	IMPORTED	BUILT			True	EST 1996 AC PAVEMENT

Network: MKY **Branch**: AP NW (NW APRON) **Section:** 4110 **Surface:** AC
L.C.D.: 01/01/1996 **Use:** APRON **Rank** P **Length:** 90.00 Ft **Width:** 199.00 Ft **True Area:** 20,463.17 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1996	INITIAL	Initial Construction	$0	0.00	True	

Network: MKY **Branch**: AP NW (NW APRON) **Section:** 4115 **Surface:** AAC
L.C.D.: 01/01/2011 **Use:** APRON **Rank** P **Length:** 178.91 Ft **Width:** 40.00 Ft **True Area:** 8,924.51 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2011	ML-OV	Mill and Overlay	$0	0.00	True	
01/01/1996	NU-IN	New Construction - Initial	$0	0.00	True	

Network: MKY **Branch**: AP NW (NW APRON) **Section:** 4120 **Surface:** AC
L.C.D.: 01/01/2011 **Use:** APRON **Rank** S **Length:** 794.28 Ft **Width:** 152.53 Ft **True Area:** 173,878.88 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2011	NU-IN	New Construction - Initial	$0	0.00	True	4" P-401, 12" P-211, 12" P-152

Network: MKY **Branch**: RW 17-35 (RUNWAY 17-35) **Section:** 6105 **Surface:** AC
L.C.D.: 01/01/1976 **Use:** RUNWAY **Rank** P **Length:** 1,000.00 Ft **Width:** 100.00 Ft **True Area:** 100,000.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1976	IMPORTED	BUILT		3.00	True	1976: 3" AC ON 7" SOIL-CEMENT

Network: MKY **Branch**: RW 17-35 (RUNWAY 17-35) **Section:** 6110 **Surface:** AC
L.C.D.: 01/01/1976 **Use:** RUNWAY **Rank** P **Length:** 3,000.00 Ft **Width:** 100.00 Ft **True Area:** 300,000.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1976	IMPORTED	BUILT		2.00	True	1976: 2" AC ON 7" SOIL-CEMENT

Network: MKY **Branch**: RW 17-35 (RUNWAY 17-35) **Section:** 6115 **Surface:** AC
L.C.D.: 01/01/1976 **Use:** RUNWAY **Rank** P **Length:** 1,000.00 Ft **Width:** 100.00 Ft **True Area:** 100,000.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1976	IMPORTED	BUILT		3.00	True	1976: 3" AC ON 7" SOIL-CEMENT

Network: MKY **Branch**: TW A (TAXIWAY A) **Section:** 105 **Surface:** AAC
L.C.D.: 01/01/2011 **Use:** TAXIWAY **Rank** P **Length:** 172.50 Ft **Width:** 100.00 Ft **True Area:** 18,056.05 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2011	ML-OV	Mill and Overlay	$0	0.00	True	
01/01/1976	IMPORTED	BUILT		3.00	True	1976: 3" AC ON 7" SOIL-CEMENT

Network: MKY **Branch**: TW A (TAXIWAY A) **Section:** 110 **Surface:** AC
L.C.D.: 01/11/2011 **Use:** TAXIWAY **Rank** P **Length:** 3,731.00 Ft **Width:** 35.00 Ft **True Area:** 133,080.44 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/11/2011	NU-IN	New Construction - Initial	$0	4.00	True	4" P-401, 12" P-211, 12" P-152

Network: MKY **Branch**: TW B (TAXIWAY B) **Section:** 205 **Surface:** PCC
L.C.D.: 01/01/1960 **Use:** TAXIWAY **Rank** P **Length:** 100.00 Ft **Width:** 46.00 Ft **True Area:** 7,880.00 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/1960	IMPORTED	BUILT			True	EST 1960 PCC

Network: MKY **Branch**: TW C (TAXIWAY C) **Section:** 305 **Surface:** AC
L.C.D.: 01/01/2011 **Use:** TAXIWAY **Rank** S **Length:** 172.50 Ft **Width:** 40.00 Ft **True Area:** 9,496.68 SqF

Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2011	NU-IN	New Construction - Initial	$0	0.00	True	4" P-401, 12" P-211, 12" P-211

Network: MKY **Branch**: TW D (TAXIWAY D) **Section:** 405 **Surface:** AC
L.C.D.: 01/01/2011 **Use:** TAXIWAY **Rank** S **Length:** 172.50 Ft **Width:** 40.00 Ft **True Area:** 9,496.68 SqF

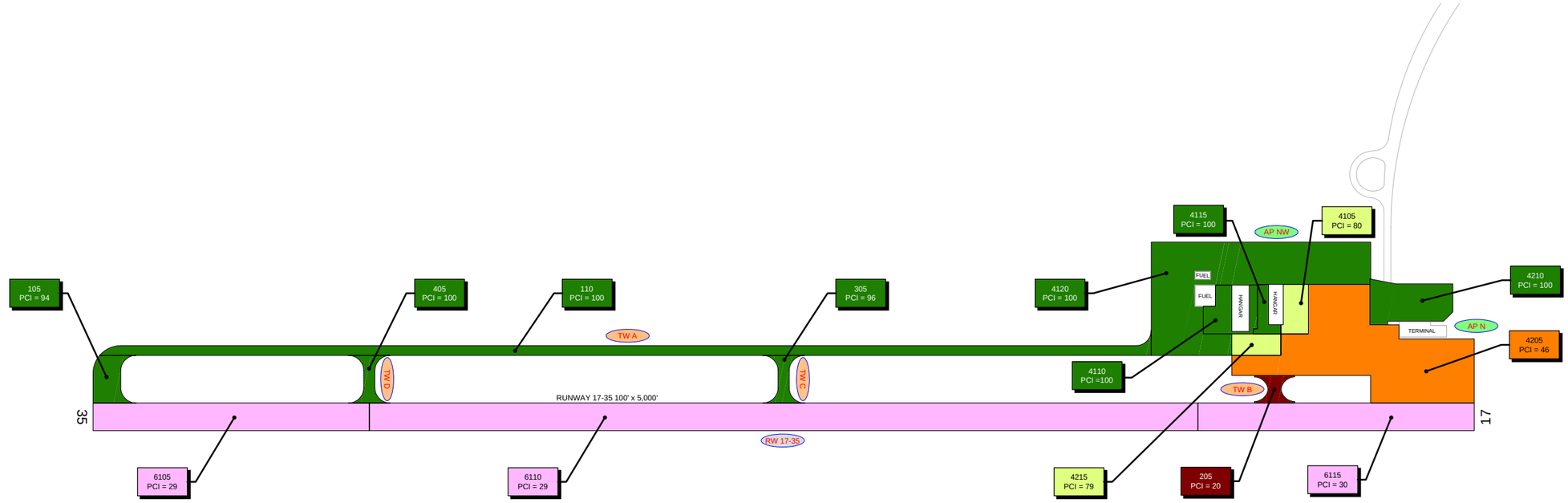
Work Date	Work Code	Work Description	Cost	Thickness (in)	Major M&R	Comments
01/01/2011	NU-IN	New Construction - Initial	$0	0.00	True	

Summary:

Work Description	Section Count	Area Total (SqFt)	Thickness Avg (in)	Thickness STD (in)
BUILT	7	736,363.48	2.75	.50
Initial Construction	2	62,063.17	.00	.00
Mill and Overlay	3	40,732.16	.00	.00
New Construction - Initial	6	348,628.79	.67	1.63

APPENDIX B

- AIRFIELD PAVEMENT CONDITION INDEX RATING EXHIBIT
- PAVEMENT CONDITION INDEX INVENTORY



LEGEND

- RW 13-31 — TYPICAL RUNWAY BRANCH ID
- TW A — TYPICAL TAXIWAY BRANCH ID
- AP S — TYPICAL APRON BRANCH ID

- PCI 86–100 GOOD
- PCI 71–85 SATISFACTORY
- PCI 56–70 FAIR
- PCI 41–55 POOR
- PCI 26–40 VERY POOR
- PCI 11–25 SERIOUS
- PCI 0–10 FAILED

"SECTION NO."
"PCI NO."

RUNWAY LENGTHS DEPICTED IN THIS DRAWING ARE FOR PAVEMENT MANAGEMENT PURPOSES ONLY AND MAY NOT MATCH PUBLISHED RUNWAY LENGTHS.

NUMBER	DATE	REVISIONS

DESIGNED:	KHA	DRAWN:	KHA	CHECKED:	KHA	DATE:	2013

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OFFICE OF FREIGHT, LOGISTICS & PASSENGER OPERATIONS

AIRFIELD PAVEMENT CONDITION RATING EXHIBIT

MARCO ISLAND EXECUTIVE AIRPORT
COLLIER COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION AND SPACEPORT OFFICE

IDENTIFIER: MKY
FDOT DISTRICT: 1

Table B-1: Pavement Condition Index Inventory

Branch Name	Branch ID	Branch Use	Section ID	True Area (FT^2)	Section Rank	Surface Type	PCI	PCI Category	Total Samples Inspected	Total Samples
RUNWAY 17-35	RW 17-35	RUNWAY	6115	100,000	P	AC	30	Very Poor	5	20
RUNWAY 17-35	RW 17-35	RUNWAY	6110	300,000	P	AC	29	Very Poor	15	60
RUNWAY 17-35	RW 17-35	RUNWAY	6105	100,000	P	AC	29	Very Poor	5	20
NORTH APRON	AP N	APRON	4215	13,752	P	AAC	79	Satisfactory	1	3
NORTH APRON	AP N	APRON	4210	41,600	P	AC	100	Good	1	9
NORTH APRON	AP N	APRON	4205	193,812	P	AC	46	Poor	5	41
NW APRON	AP NW	APRON	4120	173,879	S	AC	100	Good	4	35
NW APRON	AP NW	APRON	4115	8,924	P	AAC	100	Good	1	3
NW APRON	AP NW	APRON	4110	20,463	P	AC	100	Good	1	3
NW APRON	AP NW	APRON	4105	16,615	P	AC	80	Satisfactory	1	4
TAXIWAY D	TW D	TAXIWAY	405	9,497	S	AC	100	Good	1	2
TAXIWAY C	TW C	TAXIWAY	305	9,497	S	AC	96	Good	1	2
TAXIWAY B	TW B	TAXIWAY	205	7,880	P	PCC	20	Serious	1	1
TAXIWAY A	TW A	TAXIWAY	110	133,080	P	AC	100	Good	4	38
TAXIWAY A	TW A	TAXIWAY	105	18,056	P	AAC	94	Good	1	4

Note: If new construction, then survey date = last construction date and PCI is set to 100 by MicroPAVER.
* Sections not surveyed due to reasons such as re-sectioning, no escort, not accessible at the time of survey.

APPENDIX C

- BRANCH CONDITION REPORT
- SECTION CONDITION REPORT

Branch Condition Report

Pavement Database: FDOT NetworkID: MKY

Branch ID	Number of Sections	Sum Section Length (Ft)	Avg Section Width (Ft)	True Area (SqFt)	Use	Average PCI	PCI Standard Deviation	Weighted Average PCI
AP N (NORTH APRON)	3	1,355.44	148.17	249,164.05	APRON	75.00	22.23	56.84
AP NW (NW APRON)	4	1,242.54	120.62	219,881.54	APRON	95.00	8.66	98.49
RW 17-35 (RUNWAY 17-35)	3	5,000.00	100.00	500,000.00	RUNWAY	29.33	0.47	29.20
TW A (TAXIWAY A)	2	3,903.50	67.50	151,136.49	TAXIWAY	97.00	3.00	99.28
TW B (TAXIWAY B)	1	100.00	46.00	7,880.00	TAXIWAY	20.00	0.00	20.00
TW C (TAXIWAY C)	1	172.50	40.00	9,496.68	TAXIWAY	96.00	0.00	96.00
TW D (TAXIWAY D)	1	172.50	40.00	9,496.68	TAXIWAY	100.00	0.00	100.00

Branch Condition Report

Pavement Database: FDOT

Use Category	Number of Sections	Total Area (SqFt)	Arithmetic Average PCI	Average PCI STD.	Weighted Average PCI
APRON	7	469,045.59	86.43	18.78	76.36
RUNWAY	3	500,000.00	29.33	0.47	29.20
TAXIWAY	5	178,009.85	82.00	31.09	95.64
All	15	1,147,055.44	73.53	31.29	58.80

Section Condition Report

Pavement Database: FDOT NetworkID: MKY

Branch ID	Section ID	Last Const. Date	Surface	Use	Rank	Lanes	True Area (SqFt)	Last Inspection Date	Age At Inspection	PCI
AP N (NORTH APRON)	4205	01/01/1975	AC	APRON	P	0	193,812.45	05/13/2013	38	46.00
AP N (NORTH APRON)	4210	01/01/2010	AC	APRON	P	0	41,600.00	05/14/2013	3	100.00
AP N (NORTH APRON)	4215	01/01/2011	AAC	APRON	P	0	13,751.60	05/13/2013	2	79.00
AP NW (NW APRON)	4105	01/01/1996	AC	APRON	P	0	16,614.98	05/13/2013	17	80.00
AP NW (NW APRON)	4110	01/01/1996	AC	APRON	P	0	20,463.17	05/13/2013	17	100.00
AP NW (NW APRON)	4115	01/01/2011	AAC	APRON	P	0	8,924.51	05/13/2013	2	100.00
AP NW (NW APRON)	4120	01/01/2011	AC	APRON	S	0	173,878.88	05/13/2013	2	100.00
RW 17-35 (RUNWAY 17-35)	6105	01/01/1976	AC	RUNWAY	P	0	100,000.00	05/13/2013	37	29.00
RW 17-35 (RUNWAY 17-35)	6110	01/01/1976	AC	RUNWAY	P	0	300,000.00	05/13/2013	37	29.00
RW 17-35 (RUNWAY 17-35)	6115	01/01/1976	AC	RUNWAY	P	0	100,000.00	05/13/2013	37	30.00
TW A (TAXIWAY A)	105	01/01/2011	AAC	TAXIWAY	P	0	18,056.05	05/13/2013	2	94.00
TW A (TAXIWAY A)	110	01/11/2011	AC	TAXIWAY	P	0	133,080.44	05/13/2013	2	100.00
TW B (TAXIWAY B)	205	01/01/1960	PCC	TAXIWAY	P	0	7,880.00	05/13/2013	53	20.00
TW C (TAXIWAY C)	305	01/01/2011	AC	TAXIWAY	S	0	9,496.68	05/13/2013	2	96.00
TW D (TAXIWAY D)	405	01/01/2011	AC	TAXIWAY	S	0	9,496.68	05/13/2013	2	100.00

Section Condition Report

Pavement Database: FDOT

Age Category	Average Age At Inspection	Total Area (SqFt)	Number of Sections	Arithmetic Average PCI	PCI Standard Deviation	Weighted Average PCI
0-02	**2.00**	**366,684.84**	**7**	**95.57**	**7.70**	**98.81**
03-05	**3.00**	**41,600.00**	**1**	**100.00**	**0.00**	**100.00**
16-20	**17.00**	**37,078.15**	**2**	**90.00**	**14.14**	**91.04**
36-40	**37.25**	**693,812.45**	**4**	**33.50**	**8.35**	**33.89**
over 40	**53.00**	**7,880.00**	**1**	**20.00**	**0.00**	**20.00**
All	**16.87**	**1,147,055.44**	**15**	**73.53**	**32.39**	**58.80**

APPENDIX D

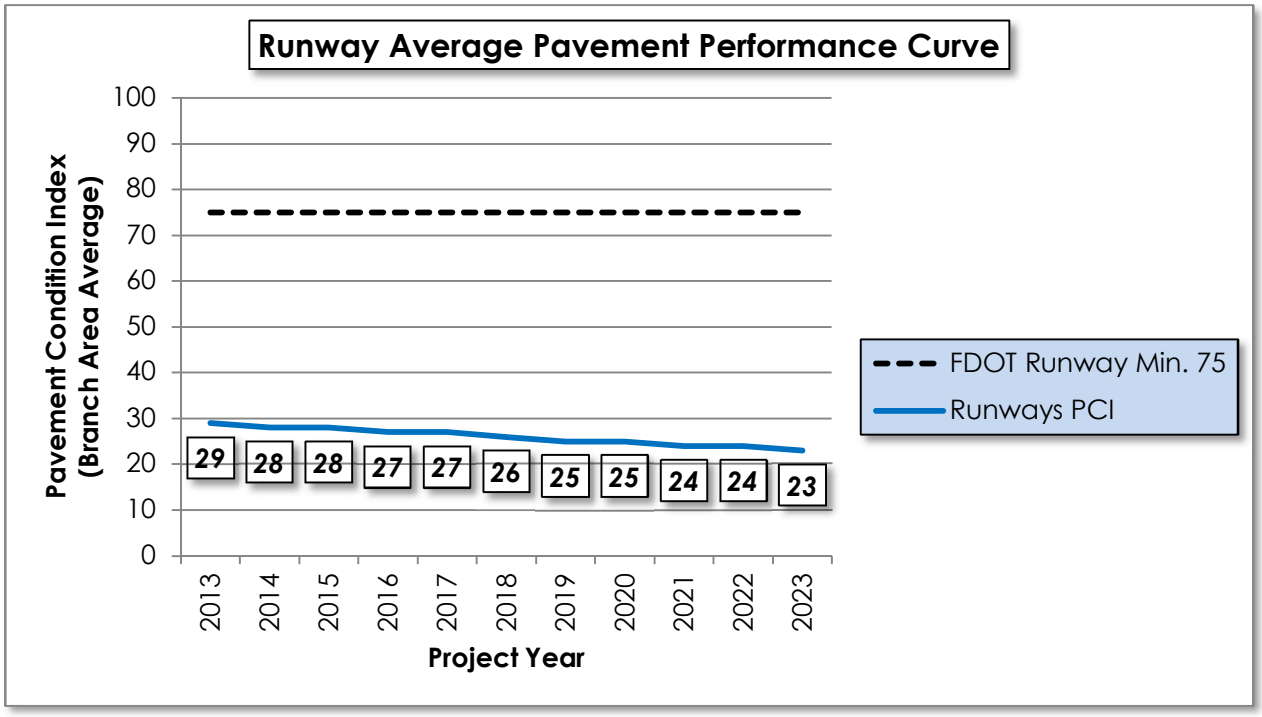
- PAVEMENT PERFORMANCE PREDICTION
- PAVEMENT PERFORMANCE BY PAVEMENT USE

Table D-1: Pavement Performance Prediction

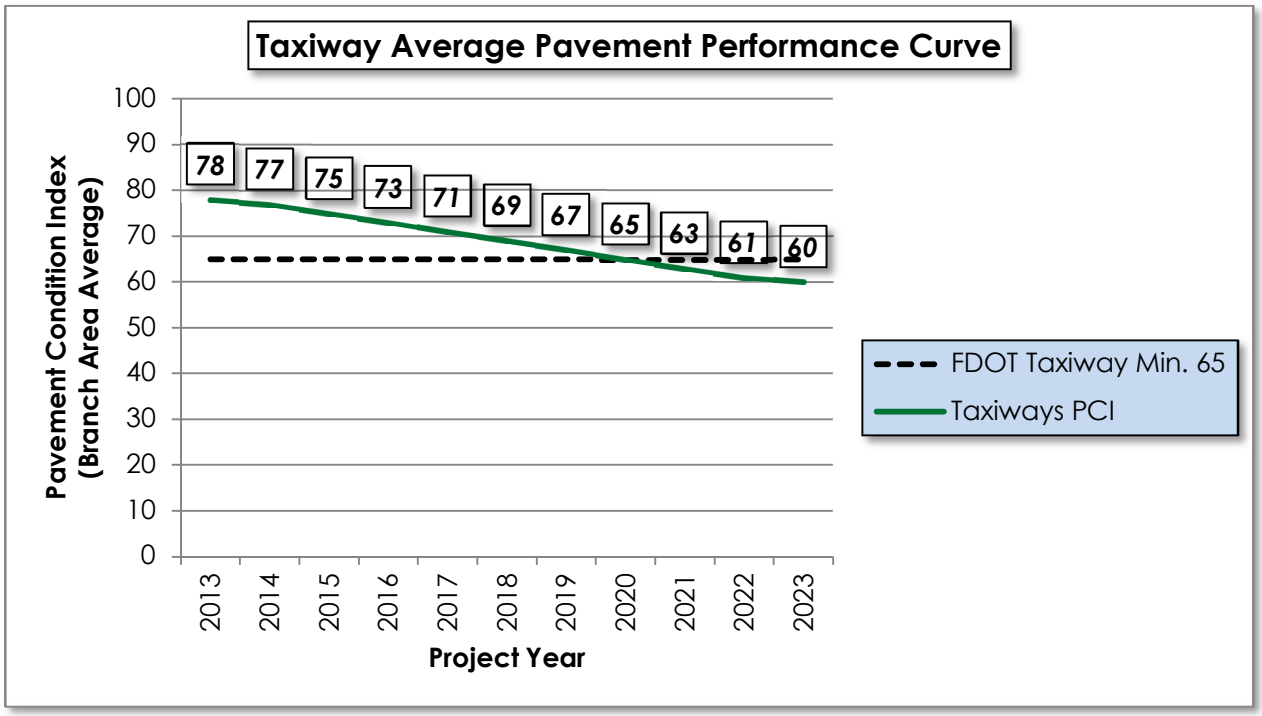
Branch ID	Section ID	Current PCI	Pavement Performance Model - PCI									
			2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
RW 17-35	6115	30	30	29	28	28	27	27	26	26	25	24
RW 17-35	6110	29	29	28	27	27	26	26	25	25	24	23
RW 17-35	6105	29	29	28	27	27	26	26	25	25	24	23
AP N	4215	79	77	75	73	71	69	68	66	65	64	62
AP N	4210	100	96	91	87	83	80	78	75	74	72	71
AP N	4205	46	46	45	44	43	43	42	42	41	41	41
AP NW	4120	100	96	91	87	83	80	78	75	74	72	71
AP NW	4115	100	98	94	91	87	84	82	79	77	74	72
AP NW	4110	100	96	91	87	83	80	78	75	74	72	71
AP NW	4105	80	78	76	74	72	71	70	69	68	67	66
TW D	405	100	98	96	93	90	87	85	83	80	78	76
TW C	305	96	94	92	89	86	84	82	79	77	75	74
TW B	205	20	20	19	19	18	18	17	17	17	16	16
TW A	110	100	98	96	93	90	87	85	83	80	78	76
TW A	105	94	92	90	87	85	83	81	80	78	77	76

Figure D-1: Pavement Performance by Pavement Use

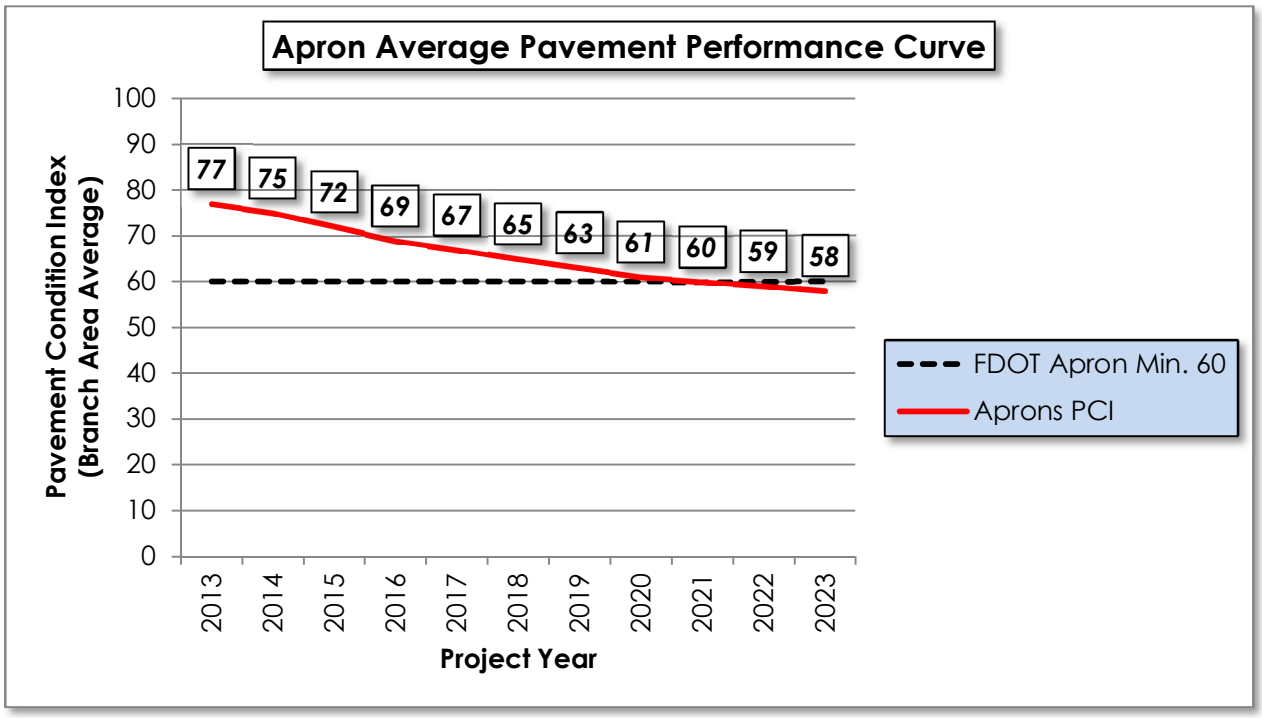
(a) Runway



(b) Taxiway



(c) Apron


Apron Average Pavement Performance Curve
Pavement Condition Index (Branch Area Average)
100
90
80
70
60
50
40
30
20
10
0
77
75
72
69
67
65
63
61
60
59
58
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Project Year
FDOT Apron Min. 60
Aprons PCI

APPENDIX E

- YEAR-1 PREVENTATIVE ACTIVITIES

Table E-1: Year-1 Preventative Activities

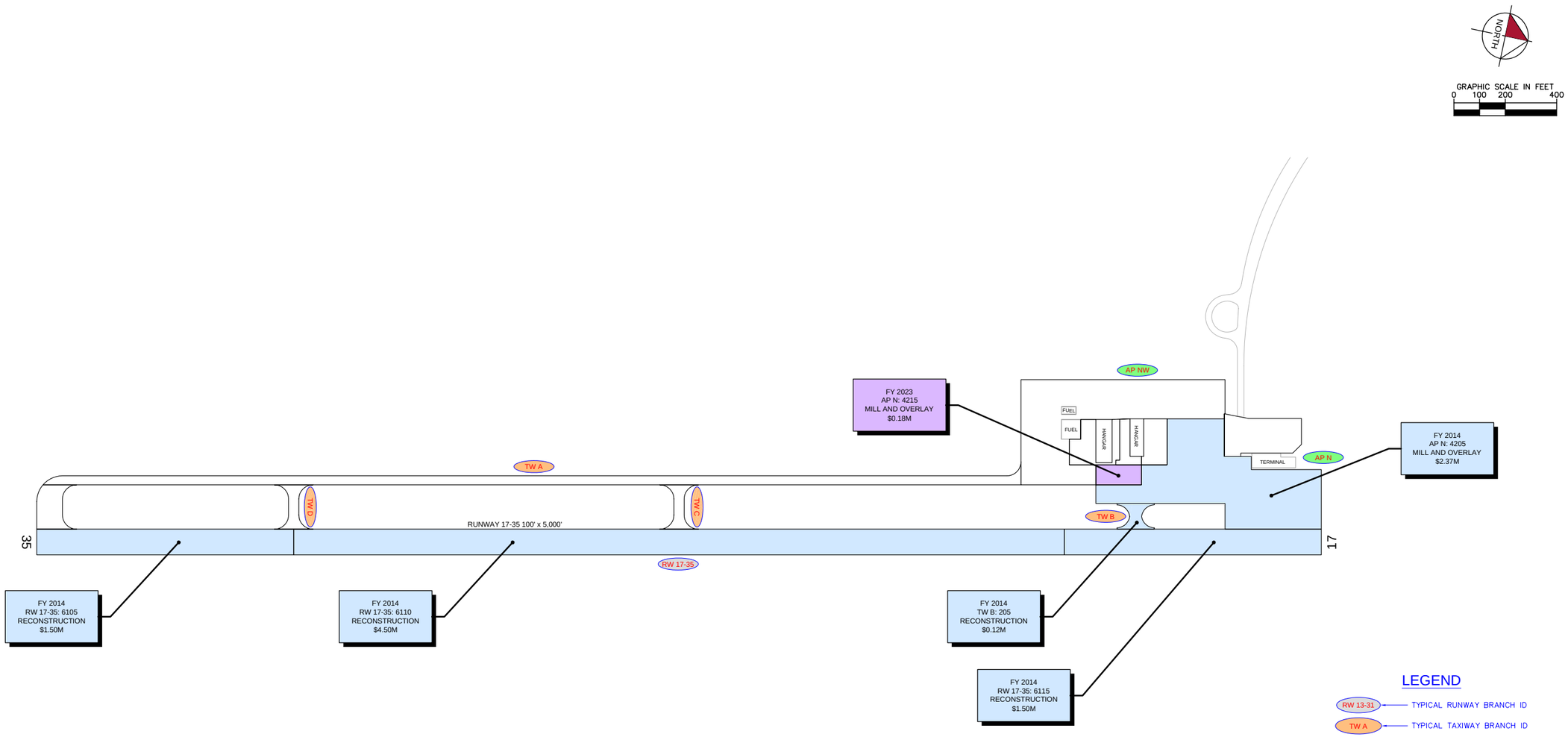
Branch Name	Branch ID	Section ID	Distress Description	Distress Severity	Work Description	Work Quantity	Work Unit	Unit Cost	Work Cost
RUNWAY 17-35	RW 17-35	6115	BLOCK CR	M	Patching - AC Full Depth	54,400.00	SqFt	$5.00	$ 272,000.24
RUNWAY 17-35	RW 17-35	6115	BLOCK CR	L	Surface Seal	45,600.00	SqFt	$0.55	$ 25,080.21
RUNWAY 17-35	RW 17-35	6115	RAVELING	M	Surface Seal	60,000.00	SqFt	$0.55	$ 33,000.27
RUNWAY 17-35	RW 17-35	6115	RAVELING	L	Surface Seal	40,000.00	SqFt	$0.55	$ 22,000.18
RUNWAY 17-35	RW 17-35	6115	WEATHERING	M	Surface Seal	32,000.00	SqFt	$0.55	$ 17,600.15
RUNWAY 17-35	RW 17-35	6110	BLOCK CR	M	Patching - AC Full Depth	207,400.00	SqFt	$5.00	$ 1,037,000.92
RUNWAY 17-35	RW 17-35	6110	BLOCK CR	L	Surface Seal	90,600.00	SqFt	$0.55	$ 49,830.41
RUNWAY 17-35	RW 17-35	6110	BLOCK CR	H	Patching - AC Full Depth	2,000.00	SqFt	$5.00	$ 10,000.01
RUNWAY 17-35	RW 17-35	6110	RAVELING	H	Patching - AC Partial Depth	24.00	SqFt	$3.00	$ 72.00
RUNWAY 17-35	RW 17-35	6110	RAVELING	L	Surface Seal	136,000.00	SqFt	$0.55	$ 74,800.62
RUNWAY 17-35	RW 17-35	6110	RAVELING	M	Surface Seal	163,976.00	SqFt	$0.55	$ 90,187.55
RUNWAY 17-35	RW 17-35	6110	WEATHERING	M	Surface Seal	112,000.00	SqFt	$0.55	$ 61,600.51
RUNWAY 17-35	RW 17-35	6105	BLOCK CR	L	Surface Seal	19,400.00	SqFt	$0.55	$ 10,670.09
RUNWAY 17-35	RW 17-35	6105	BLOCK CR	M	Patching - AC Full Depth	53,840.00	SqFt	$5.00	$ 269,200.24

Branch Name	Branch ID	Section ID	Distress Description	Distress Severity	Work Description	Work Quantity	Work Unit	Unit Cost	Work Cost
RUNWAY 17-35	RW 17-35	6105	L & T CR	L	Crack Sealing - AC	2,876.00	Ft	$2.75	$ 7,908.99
RUNWAY 17-35	RW 17-35	6105	L & T CR	M	Crack Sealing - AC	1,280.00	Ft	$2.75	$ 3,520.00
RUNWAY 17-35	RW 17-35	6105	RAVELING	M	Surface Seal	60,000.00	SqFt	$0.55	$ 33,000.27
RUNWAY 17-35	RW 17-35	6105	RAVELING	L	Surface Seal	40,000.00	SqFt	$0.55	$ 22,000.18
RUNWAY 17-35	RW 17-35	6105	WEATHERING	M	Surface Seal	32,000.00	SqFt	$0.55	$ 17,600.15
NORTH APRON	AP N	4215	L & T CR	L	Crack Sealing - AC	1,144.10	Ft	$2.75	$ 3,146.36
NORTH APRON	AP N	4205	BLOCK CR	L	Surface Seal	174,431.20	SqFt	$0.55	$ 95,937.96
NORTH APRON	AP N	4205	BLOCK CR	M	Patching - AC Full Depth	19,381.20	SqFt	$5.00	$ 96,906.31
NORTH APRON	AP N	4205	DEPRESSION	L	Patching - AC Full Depth	990.90	SqFt	$5.00	$ 4,954.41
NORTH APRON	AP N	4205	RAVELING	L	Surface Seal	193,812.40	SqFt	$0.55	$ 106,597.73
NW APRON	AP NW	4105	L & T CR	L	Crack Sealing - AC	267.10	Ft	$2.75	$ 734.52
NW APRON	AP NW	4105	OIL SPILLAGE	N	Surface Seal	70.90	SqFt	$0.55	$ 38.99
TAXIWAY C	TW C	305	L & T CR	L	Crack Sealing - AC	57.00	Ft	$2.75	$ 156.85
TAXIWAY B	TW B	205	SHAT. SLAB	L	Slab Replacement - PCC	5,735.60	SqFt	$45.00	$ 258,103.23
TAXIWAY B	TW B	205	SHAT. SLAB	M	Slab Replacement - PCC	1,911.90	SqFt	$45.00	$ 86,034.41

Branch Name	Branch ID	Section ID	Distress Description	Distress Severity	Work Description	Work Quantity	Work Unit	Unit Cost	Work Cost
TAXIWAY A	TW A	105	L & T CR	L	Crack Sealing - AC	296.10	Ft	$2.75	$ 814.33
								Total =	$ 2,710,498.09

APPENDIX F

- AIRFIELD PAVEMENT 10-YEAR MAJOR REHABILITATION EXHIBIT
- AIRFIELD PAVEMENT 10-YEAR MAJOR REHABILITATION TABLE



NUMBER	DATE	REVISIONS

DESIGNED:	KHA	DRAWN:	KHA	CHECKED:	KHA	DATE:	2013

K:\MPB_Aviation\14377022\CADD\PLANSHEETS\MKY - MARCO ISLAND EXECUTIVE AIRPORT_EXHIBITS\004-MKY-REHAB.dwg PLOTTED: November 19, 2013 - 2:19 PM, BY: Brock, Ali

OFFICE OF FREIGHT, LOGISTICS & PASSENGER OPERATIONS

AIRFIELD PAVEMENT 10-YEAR MAJOR REHABILITATION EXHIBIT

MARCO ISLAND EXECUTIVE AIRPORT
COLLIER COUNTY, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION - AVIATION AND SPACEPORT OFFICE

IDENTIFIER: MKY

FDOT DISTRICT: 1

Table F-1: Airfield Pavement 10-Year Major Rehabilitation Table

Year	Branch Name	Section ID	Major M&R Costs*	PCI Before M&R	M&R Activity	PCI After M&R
2014	RUNWAY 17-35	6115	$ 1,500,000.36	30	Reconstruction	100
2014	RUNWAY 17-35	6110	$ 4,500,001.06	29	Reconstruction	100
2014	RUNWAY 17-35	6105	$ 1,500,000.36	29	Reconstruction	100
2014	NORTH APRON	4205	$ 2,372,265.14	46	Mill and Overlay	100
2014	TAXIWAY B	205	$ 118,200.03	20	Reconstruction	100
2023	NORTH APRON	4215	$ 179,427.18	64	Mill and Overlay	100
		Total =	**$10,169,894.13**			

* Costs are adjusted for inflation at 3%

APPENDIX G

- PHOTOGRAPHS

Runway 17-35, Section 6105, Sample Unit 113 – Low and Medium Severity (43) Block Cracking, Medium Severity (48) Longitudinal and Transverse Cracking, Medium Severity (52) Raveling

Runway 17-35, Section 6110, Sample Unit 122 – Low, Medium and High Severity (43) Block Cracking, Low Severity (52) Raveling, Low and Medium Severity (57) Weathering

Runway 17-35, Section 6110, Sample Unit 136 – Medium Severity (52) Raveling

Taxiway Alpha, Section 105, Sample Unit 101 – Low Severity (48) Longitudinal and Transverse Cracking

Apron North, Section 4205, Sample Unit 100 – Low and Medium Severity (43) Block Cracking, Low Severity (52) Raveling, Low Severity (57) Weathering

Apron North, Section 4205, Sample Unit 100 – Medium Severity (43) Block Cracking, Low Severity (52) Raveling, Low Severity (57) Weathering

Apron North, Section 4215, Sample Unit 307 – Low Severity (48) Longitudinal and Transverse Cracking

Apron North, Section 4215, Sample Unit 307 – Low Severity (48) Longitudinal and Transverse Cracking

APPENDIX H

- DISTRESS DATA – RE-INSPECTION REPORT

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: AP N Name: NORTH APRON Use: APRON Area: 249,164.05SqFt

Section: 4205 of 3 From: - To: - Last Const.: 01/01/1975
Surface: AC Family: FDOT-SAPMP-GA-AP-AC Zone: Category: Rank: P
Area: 193,812.45SqFt Length: 878.00Ft Width: 232.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 41 Surveyed: 5
Conditions: PCI : 46
Inspection Comments: XML Import

Sample Number: 100 Type: R Area: 5,000.00SqFt PCI = 38
Sample Comments:

43 BLOCK CR	L	4,000.00 SqFt	Comments:
43 BLOCK CR	M	1,000.00 SqFt	Comments:
57 WEATHERING	L	5,000.00 SqFt	Comments:
52 RAVELING	L	5,000.00 SqFt	Comments:
45 DEPRESSION	L	112.00 SqFt	Comments:

Sample Number: 152 Type: R Area: 5,000.00SqFt PCI = 40
Sample Comments:

43 BLOCK CR	L	4,000.00 SqFt	Comments:
43 BLOCK CR	M	1,000.00 SqFt	Comments:
52 RAVELING	L	5,000.00 SqFt	Comments:
57 WEATHERING	L	5,000.00 SqFt	Comments:

Sample Number: 257 Type: R Area: 5,000.00SqFt PCI = 54
Sample Comments:

43 BLOCK CR	L	5,000.00 SqFt	Comments:
52 RAVELING	L	5,000.00 SqFt	Comments:
57 WEATHERING	L	5,000.00 SqFt	Comments:

Sample Number: 303 Type: R Area: 5,000.00SqFt PCI = 54
Sample Comments:

43 BLOCK CR	L	5,000.00 SqFt	Comments:
52 RAVELING	L	5,000.00 SqFt	Comments:
57 WEATHERING	L	5,000.00 SqFt	Comments:

Sample Number: 455 Type: R Area: 5,000.00SqFt PCI = 44
Sample Comments:

43 BLOCK CR	M	500.00 SqFt	Comments:
43 BLOCK CR	L	4,500.00 SqFt	Comments:
52 RAVELING	L	5,000.00 SqFt	Comments:
57 WEATHERING	L	5,000.00 SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: AP N Name: NORTH APRON Use: APRON Area: 249,164.05SqFt

Section: 4210 of 3 From: - To: - Last Const.: 01/01/2010
Surface: AC Family: FDOT-SAPMP-GA-AP-AC Zone: Category: Rank: P
Area: 41,600.00SqFt Length: 300.00Ft Width: 135.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 9 Surveyed: 1
Conditions: PCI : 100
Inspection Comments:

Sample Number: 451 Type: R Area: 5,000.00SqFt PCI = 100
Sample Comments:
<NO DISTRESSES>

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: AP N Name: NORTH APRON Use: APRON Area: 249,164.05SqFt

Section: 4215 of 3 From: - To: - Last Const.: 01/01/2011
Surface: AAC Family: FDOT-SAPMP-GA-AP-AAC Zone: Category: Rank: P
Area: 13,751.60SqFt Length: 177.44Ft Width: 77.50Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 3 Surveyed: 1
Conditions: PCI : 79
Inspection Comments: XML Import

Sample Number: 307 Type: R Area: 5,000.00SqFt PCI = 79
Sample Comments:

48 L & T CR	L	416.00 Ft	Comments:

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: AP NW Name: NW APRON Use: APRON Area: 219,881.54SqFt

Section: 4105 of 4 From: - To: - Last Const.: 01/01/1996
Surface: AC Family: FDOT-SAPMP-GA-AP-AC Zone: Category: Rank: P
Area: 16,614.98SqFt Length: 179.35Ft Width: 90.94Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 8 Surveyed: 1
Conditions: PCI : 80
Inspection Comments: XML Import

Sample Number: 356 Type: R Area: 4,852.00SqFt PCI = 80
Sample Comments:

48	L & T CR	L	78.00 Ft	Comments:
49	OIL SPILLAGE	N	12.00 SqFt	Comments:
50	PATCHING	L	143.00 SqFt	Comments:
57	WEATHERING	L	4,709.00 SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: AP NW Name: NW APRON Use: APRON Area: 219,881.54SqFt

Section: 4110 of 4 From: - To: - Last Const.: 01/01/1996
Surface: AC Family: FDOT-SAPMP-GA-AP-AC Zone: Category: Rank: P
Area: 20,463.17SqFt Length: 90.00Ft Width: 199.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 8 Surveyed: 1
Conditions: PCI : 100
Inspection Comments: XML Import

Sample Number: 103 Type: R Area: 5,000.00SqFt PCI = 100
Sample Comments:
<NO DISTRESSES>

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: AP NW Name: NW APRON Use: APRON Area: 219,881.54SqFt

Section: 4115 of 4 From: - To: - Last Const.: 01/01/2011
Surface: AAC Family: FDOT-SAPMP-GA-AP-AAC Zone: Category: Rank: P
Area: 8,924.51SqFt Length: 178.91Ft Width: 40.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 3 Surveyed: 1
Conditions: PCI : 100
Inspection Comments: XML Import

Sample Number: 358 Type: R Area: 5,000.00SqFt PCI = 100
Sample Comments:
<NO DISTRESSES>

Re-inspection Report

FDOT

Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: AP NW Name: NW APRON Use: APRON Area: 219,881.54SqFt

Section: 4120 of 4 From: - To: - Last Const.: 01/01/2011

Surface: AC Family: FDOT-SAPMP-GA-AP-AC Zone: Category: Rank: S

Area: 173,878.88SqFt Length: 794.28Ft Width: 152.53Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 35 Surveyed: 4

Conditions: PCI : 100

Inspection Comments: XML Import

Sample Number: 104 Type: R Area: 5,000.00SqFt PCI = 100

Sample Comments:

<NO DISTRESSES>

Sample Number: 151 Type: R Area: 5,000.00SqFt PCI = 100

Sample Comments:

<NO DISTRESSES>

Sample Number: 156 Type: R Area: 5,000.00SqFt PCI = 100

Sample Comments:

<NO DISTRESSES>

Sample Number: 350 Type: R Area: 5,000.00SqFt PCI = 100

Sample Comments:

<NO DISTRESSES>

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: RW 17-35 Name: RUNWAY 17-35 Use: RUNWAY Area: 500,000.00SqFt

Section: 6105 of 3 From: - To: - Last Const.: 01/01/1976
Surface: AC Family: FDOT-SAPMP-GA-RW-AC Zone: Category: Rank: P
Area: 100,000.00SqFt Length: 1,000.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 20 Surveyed: 5
Conditions: PCI : 29
Inspection Comments: XML Import

Sample Number: 103 Type: R Area: 5,000.00SqFt PCI = 28
Sample Comments:

48 LONGITUDINAL/TRANSVERSE CRACKING	M	122.00	Ft	Comments:
43 BLOCK CRACKING	M	1,500.00	SqFt	Comments:
48 L & T CR	L	243.00	Ft	Comments:
43 BLOCK CRACKING	M	260.00	SqFt	Comments:
52 RAVELING	M	5,000.00	SqFt	Comments:

Sample Number: 107 Type: R Area: 5,000.00SqFt PCI = 26
Sample Comments:

48 L & T CR	L	150.00	Ft	Comments:
43 BLOCK CRACKING	M	350.00	SqFt	Comments:
43 BLOCK CR	M	1,500.00	SqFt	Comments:
52 RAVELING	M	5,000.00	SqFt	Comments:
48 L & T CR	L	104.00	Ft	Comments:
43 BLOCK CRACKING	M	1,150.00	SqFt	Comments:
43 BLOCK CR	M	600.00	SqFt	Comments:

Sample Number: 113 Type: R Area: 5,000.00SqFt PCI = 23
Sample Comments:

52 RAVELING	M	5,000.00	SqFt	Comments:
43 BLOCK CR	M	1,500.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,000.00	SqFt	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	M	198.00	Ft	Comments:
43 BLOCK CR	M	500.00	SqFt	Comments:
43 BLOCK CR	L	1,200.00	SqFt	Comments:

Sample Number: 116 Type: R Area: 5,000.00SqFt PCI = 33
Sample Comments:

43 BLOCK CR	M	1,700.00	SqFt	Comments:
43 BLOCK CR	L	800.00	SqFt	Comments:
57 WEATHERING	L	1,000.00	SqFt	Comments:
57 WEATHERING	M	4,000.00	SqFt	Comments:
52 RAVELING	L	5,000.00	SqFt	Comments:
48 L & T CR	L	46.00	Ft	Comments:
43 BLOCK CR	L	1,100.00	SqFt	Comments:
43 BLOCK CR	M	1,100.00	SqFt	Comments:

Sample Number: 119 Type: R Area: 5,000.00SqFt PCI = 35
Sample Comments:

43 BLOCK CR	L	1,200.00	SqFt	Comments:
43 BLOCK CR	M	1,300.00	SqFt	Comments:
52 RAVELING	L	5,000.00	SqFt	Comments:

Re-inspection Report

FDOT

Report Generated Date: September 25, 2013

57 WEATHERING	L	1,000.00 SqFt	Comments:
57 WEATHERING	M	4,000.00 SqFt	Comments:
43 BLOCK CR	M	1,000.00 SqFt	Comments:
43 BLOCK CR	L	550.00 SqFt	Comments:
48 L & T CR	L	176.00 Ft	Comments:

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: RW 17-35 Name: RUNWAY 17-35 Use: RUNWAY Area: 500,000.00SqFt

Section: 6110 of 3 From: - To: - Last Const.: 01/01/1976
Surface: AC Family: FDOT-SAPMP-GA-RW-AC Zone: Category: Rank: P
Area: 300,000.00SqFt Length: 3,000.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 60 Surveyed: 15
Conditions: PCI : 29
Inspection Comments: XML Import

Sample Number: 122 Type: R Area: 5,000.00SqFt PCI = 25
Sample Comments:

43 BLOCK CR	M	1,500.00 SqFt	Comments:
43 BLOCK CR	L	1,000.00 SqFt	Comments:
52 RAVELING	L	5,000.00 SqFt	Comments:
57 WEATHERING	L	1,000.00 SqFt	Comments:
57 WEATHERING	M	4,000.00 SqFt	Comments:
43 BLOCK CR	H	500.00 SqFt	Comments:
43 BLOCK CR	M	500.00 SqFt	Comments:
43 BLOCK CR	L	1,500.00 SqFt	Comments:

Sample Number: 130 Type: R Area: 5,000.00SqFt PCI = 25
Sample Comments:

52 RAVELING	M	5,000.00 SqFt	Comments:
43 BLOCK CR	M	700.00 SqFt	Comments:
43 BLOCK CRACKING	M	1,800.00 SqFt	Comments:
43 BLOCK CR	M	1,100.00 SqFt	Comments:
43 BLOCK CRACKING	M	1,400.00 SqFt	Comments:

Sample Number: 131 Type: R Area: 5,000.00SqFt PCI = 25
Sample Comments:

43 BLOCK CRACKING	M	1,050.00 SqFt	Comments:
43 BLOCK CRACKING	M	1,450.00 SqFt	Comments:
52 RAVELING	M	5,000.00 SqFt	Comments:
43 BLOCK CR	M	1,050.00 SqFt	Comments:
43 BLOCK CRACKING	M	1,450.00 SqFt	Comments:

Sample Number: 136 Type: R Area: 5,000.00SqFt PCI = 23
Sample Comments:

43 BLOCK CRACKING	M	1,000.00 SqFt	Comments:
43 BLOCK CRACKING	L	1,500.00 SqFt	Comments:
43 BLOCK CR	M	600.00 SqFt	Comments:
43 BLOCK CRACKING	M	1,900.00 SqFt	Comments:
52 RAVELING	M	240.00 SqFt	Comments:
52 RAVELING	M	4,760.00 SqFt	Comments:

Sample Number: 141 Type: R Area: 5,000.00SqFt PCI = 25
Sample Comments:

43 BLOCK CR	M	1,500.00 SqFt	Comments:
43 BLOCK CRACKING	M	1,000.00 SqFt	Comments:
52 RAVELING	M	5,000.00 SqFt	Comments:
43 BLOCK CR	M	800.00 SqFt	Comments:
43 BLOCK CRACKING	M	1,700.00 SqFt	Comments:

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Sample Number: 145 Type: R Area: 5,000.00SqFt PCI = 25
Sample Comments:

43 BLOCK CR	M	750.00	SqFt	Comments:
52 RAVELING	M	5,000.00	SqFt	Comments:
43 BLOCK CR	M	1,100.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,400.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,750.00	SqFt	Comments:

Sample Number: 146 Type: R Area: 5,000.00SqFt PCI = 21
Sample Comments:

52 RAVELING	H	6.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,100.00	SqFt	Comments:
43 BLOCK CRACKING	L	1,400.00	SqFt	Comments:
43 BLOCK CR	M	1,500.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,000.00	SqFt	Comments:
52 RAVELING	M	4,994.00	SqFt	Comments:

Sample Number: 149 Type: R Area: 5,000.00SqFt PCI = 25
Sample Comments:

43 BLOCK CR	M	1,500.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,000.00	SqFt	Comments:
43 BLOCK CR	M	1,050.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,450.00	SqFt	Comments:
52 RAVELING	M	5,000.00	SqFt	Comments:

Sample Number: 150 Type: R Area: 5,000.00SqFt PCI = 25
Sample Comments:

43 BLOCK CRACKING	M	1,450.00	SqFt	Comments:
43 BLOCK CR	M	1,050.00	SqFt	Comments:
43 BLOCK CR	M	1,500.00	SqFt	Comments:
43 BLOCK CRACKING	M	1,000.00	SqFt	Comments:
52 RAVELING	M	5,000.00	SqFt	Comments:

Sample Number: 155 Type: R Area: 5,000.00SqFt PCI = 32
Sample Comments:

43 BLOCK CR	M	1,500.00	SqFt	Comments:
43 BLOCK CR	L	1,000.00	SqFt	Comments:
52 RAVELING	L	4,500.00	SqFt	Comments:
52 RAVELING	M	500.00	SqFt	Comments:
57 WEATHERING	M	4,000.00	SqFt	Comments:
57 WEATHERING	L	500.00	SqFt	Comments:
43 BLOCK CR	M	900.00	SqFt	Comments:
43 BLOCK CR	L	1,600.00	SqFt	Comments:

Sample Number: 156 Type: R Area: 5,000.00SqFt PCI = 32
Sample Comments:

43 BLOCK CR	M	1,500.00	SqFt	Comments:
43 BLOCK CR	M	1,050.00	SqFt	Comments:
43 BLOCK CR	L	1,000.00	SqFt	Comments:
43 BLOCK CR	L	1,450.00	SqFt	Comments:
52 RAVELING	L	4,500.00	SqFt	Comments:
52 RAVELING	M	500.00	SqFt	Comments:
57 WEATHERING	L	500.00	SqFt	Comments:
57 WEATHERING	M	4,000.00	SqFt	Comments:

Sample Number: 160 Type: R Area: 5,000.00SqFt PCI = 37
Sample Comments:

43 BLOCK CR	M	700.00	SqFt	Comments:

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43 BLOCK CR	L	1,800.00 SqFt	Comments:	
52 RAVELING	L	5,000.00 SqFt	Comments:	
57 WEATHERING	L	1,000.00 SqFt	Comments:	
57 WEATHERING	M	4,000.00 SqFt	Comments:	
43 BLOCK CR	M	1,000.00 SqFt	Comments:	
43 BLOCK CR	L	1,500.00 SqFt	Comments:	

Sample Number: 165 Type: R Area: 5,000.00SqFt PCI = 38

Sample Comments:

43 BLOCK CR	M	900.00 SqFt	Comments:	
43 BLOCK CR	L	1,600.00 SqFt	Comments:	
52 RAVELING	L	5,000.00 SqFt	Comments:	
57 WEATHERING	L	1,000.00 SqFt	Comments:	
57 WEATHERING	M	4,000.00 SqFt	Comments:	
43 BLOCK CR	M	450.00 SqFt	Comments:	
43 BLOCK CR	L	2,050.00 SqFt	Comments:	

Sample Number: 170 Type: R Area: 5,000.00SqFt PCI = 36

Sample Comments:

43 BLOCK CR	M	950.00 SqFt	Comments:	
43 BLOCK CR	L	1,550.00 SqFt	Comments:	
52 RAVELING	L	5,000.00 SqFt	Comments:	
43 BLOCK CR	L	1,000.00 SqFt	Comments:	
43 BLOCK CR	M	1,500.00 SqFt	Comments:	
57 WEATHERING	M	4,000.00 SqFt	Comments:	
57 WEATHERING	L	1,000.00 SqFt	Comments:	

Sample Number: 175 Type: R Area: 5,000.00SqFt PCI = 36

Sample Comments:

43 BLOCK CR	L	1,200.00 SqFt	Comments:	
43 BLOCK CR	M	1,300.00 SqFt	Comments:	
52 RAVELING	L	5,000.00 SqFt	Comments:	
57 WEATHERING	L	1,000.00 SqFt	Comments:	
57 WEATHERING	M	4,000.00 SqFt	Comments:	
43 BLOCK CR	M	1,000.00 SqFt	Comments:	
43 BLOCK CR	L	1,500.00 SqFt	Comments:	

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: RW 17-35 Name: RUNWAY 17-35 Use: RUNWAY Area: 500,000.00SqFt

Section: 6115 of 3 From: - To: - Last Const.: 01/01/1976
Surface: AC Family: FDOT-SAPMP-GA-RW-AC Zone: Category: Rank: P
Area: 100,000.00SqFt Length: 1,000.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 20 Surveyed: 5
Conditions: PCI : 30
Inspection Comments: XML Import

Sample Number: 182 Type: R Area: 5,000.00SqFt PCI = 23
Sample Comments:

43 BLOCK CR	M	750.00 SqFt	Comments:
43 BLOCK CRACKING	M	1,750.00 SqFt	Comments:
52 RAVELING	M	5,000.00 SqFt	Comments:
43 BLOCK CR	M	1,100.00 SqFt	Comments:
43 BLOCK CR	L	1,400.00 SqFt	Comments:

Sample Number: 186 Type: R Area: 5,000.00SqFt PCI = 25
Sample Comments:

43 BLOCK CRACKING	M	2,500.00 SqFt	Comments:
52 RAVELING	M	5,000.00 SqFt	Comments:
43 BLOCK CR	M	750.00 SqFt	Comments:
43 BLOCK CRACKING	M	1,750.00 SqFt	Comments:

Sample Number: 190 Type: R Area: 5,000.00SqFt PCI = 23
Sample Comments:

43 BLOCK CRACKING	M	1,500.00 SqFt	Comments:
52 RAVELING	M	5,000.00 SqFt	Comments:
43 BLOCK CR	M	750.00 SqFt	Comments:
43 BLOCK CR	L	1,750.00 SqFt	Comments:
43 BLOCK CR	M	1,000.00 SqFt	Comments:

Sample Number: 194 Type: R Area: 5,000.00SqFt PCI = 40
Sample Comments:

43 BLOCK CR	L	2,500.00 SqFt	Comments:
52 RAVELING	L	5,000.00 SqFt	Comments:
57 WEATHERING	L	1,000.00 SqFt	Comments:
57 WEATHERING	M	4,000.00 SqFt	Comments:
43 BLOCK CR	L	1,750.00 SqFt	Comments:
43 BLOCK CR	M	750.00 SqFt	Comments:

Sample Number: 198 Type: R Area: 5,000.00SqFt PCI = 39
Sample Comments:

43 BLOCK CR	L	2,500.00 SqFt	Comments:
52 RAVELING	L	5,000.00 SqFt	Comments:
57 WEATHERING	L	1,000.00 SqFt	Comments:
57 WEATHERING	M	4,000.00 SqFt	Comments:
43 BLOCK CR	M	1,000.00 SqFt	Comments:
43 BLOCK CR	L	1,500.00 SqFt	Comments:

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: TW A Name: TAXIWAY A Use: TAXIWAY Area: 151,136.49SqFt

Section: 105 of 2 From: - To: - Last Const.: 01/01/2011
Surface: AAC Family: FDOT-SAPMP-GA-TW-AAC Zone: Category: Rank: P
Area: 18,056.05SqFt Length: 172.50Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 4 Surveyed: 1
Conditions: PCI : 94
Inspection Comments: XML Import

Sample Number: 101 Type: R Area: 5,000.00SqFt PCI = 94
Sample Comments:

48 L & T CR	L	82.00 Ft	Comments:

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: TW A Name: TAXIWAY A Use: TAXIWAY Area: 151,136.49SqFt

Section: 110 of 2 From: - To: - Last Const.: 01/11/2011
Surface: AC Family: FDOT-SAPMP-GA-TW-AC Zone: Category: Rank: P
Area: 133,080.44SqFt Length: 3,731.00Ft Width: 35.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 38 Surveyed: 4
Conditions: PCI : 100
Inspection Comments: XML Import

Sample Number: 107 Type: R Area: 3,500.00SqFt PCI = 100
Sample Comments:
<NO DISTRESSES>

Sample Number: 117 Type: R Area: 3,500.00SqFt PCI = 100
Sample Comments:
<NO DISTRESSES>

Sample Number: 127 Type: R Area: 3,500.00SqFt PCI = 100
Sample Comments:
<NO DISTRESSES>

Sample Number: 138 Type: R Area: 3,500.00SqFt PCI = 100
Sample Comments:
<NO DISTRESSES>

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: TW B Name: TAXIWAY B Use: TAXIWAY Area: 7,880.00SqFt

Section: 205 of 1 From: - To: - Last Const.: 01/01/1960
Surface: PCC Family: FDOT-SAPMP-GA-RW-TW-PCC Zone: Category: Rank: P
Area: 7,880.00SqFt Length: 100.00Ft Width: 46.00Ft
Slabs: 9 Slab Width: 29.15Ft Slab Length: 29.15Ft Joint Length: 169.61Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 1 Surveyed: 1
Conditions: PCI : 20
Inspection Comments: XML Import

Sample Number: 100 Type: R Area: 4.00Slabs PCI = 20
Sample Comments:

72 SHAT. SLAB	L	1.00 Slabs	Comments:
72 SHAT. SLAB	L	1.00 Slabs	Comments:
72 SHAT. SLAB	L	1.00 Slabs	Comments:
72 SHAT. SLAB	M	1.00 Slabs	Comments:

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: TW C Name: TAXIWAY C Use: TAXIWAY Area: 9,496.68SqFt

Section: 305 of 1 From: - To: - Last Const.: 01/01/2011
Surface: AC Family: FDOT-SAPMP-GA-TW-AC Zone: Category: Rank: S
Area: 9,496.68SqFt Length: 172.50Ft Width: 40.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 2 Surveyed: 1
Conditions: PCI : 96
Inspection Comments: XML Import

Sample Number: 250 Type: R Area: 999.00SqFt PCI = 96
Sample Comments:

48 L & T CR	L	6.00 Ft	Comments:

Re-inspection Report

FDOT
Report Generated Date: September 25, 2013

Network: MKY Name: MARCO ISLAND AIRPORT

Branch: TW D Name: TAXIWAY D Use: TAXIWAY Area: 9,496.68SqFt

Section: 405 of 1 From: - To: - Last Const.: 01/01/2011
Surface: AC Family: FDOT-SAPMP-GA-TW-AC Zone: Category: Rank: S
Area: 9,496.68SqFt Length: 172.50Ft Width: 40.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 05/13/2013 Total Samples: 2 Surveyed: 1
Conditions: PCI : 100
Inspection Comments: XML Import

Sample Number: 201 Type: R Area: 999.00SqFt PCI = 100
Sample Comments:
<NO DISTRESSES>